BRITISH MEDICAL JOURNAL:

BEING THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

EDITED BY ANDREW WYNTER, M.D.

No. CLXII.] LONDON: SATURDAY, FEBRUARY 4, 1860. [NEW SERIES.

Lectures

ON

THE HISTORIC LITERATURE OF THE PATHOLOGY OF THE HEART AND GREAT VESSELS.

DELIVERED AT THE GROSVENOR PLACE SCHOOL OF MEDICINE.

By JOHN COCKLE, M.D., M.R.C.P., F.L.S., Physician to the Royal Free Hospital; Lecturer on the Principles and Practice of Medicine at the Grosvenor Place Medical School.

LECTURE I.

GENTLEMEN,—I propose, during a portion of the present session, to deliver to you a course of Lectures upon the Diseases of the Heart. The subject matter naturally admits of a triple division.

I. History and Literature.
II. General Symptoms, Ætiology, Morbid Anatomy, Physical Diagnosis, Prognosis, and Therapeutics.
III. The Special Pathology of the Organ.

With respect to the historical part, I need not, I think, labour to awaken your sympathy. It seems so natural with us all to feel spontaneously a lively interest in the past. The spell by history cast around our boyhood days still holds the manlier intellect in thrall. But, apart from its mere interest, the knowledge of the past asserts its higher rights and claims a loftier privilege. It is the standard whereby to estimate the present, and constitutes, as it were, a sibyl's book wherein to read the future. It is, moreover, one of the indispensable conditions for entering successfully the field of research. Indeed, without such knowledge, how often is our ignorance rebuked, or, with the purest intentions, how often are we prevented doing full, open-handed justice to those who have preceded us on the road we are journeying. Well might Cicero exclaim:—"Nescire quid antea quàm natus sis, acciderit, id est semper esse puerum."

The historical portion of our subject may be comprised under two heads: the first extending from the earliest times to the Harveian era; the second, from this era to the discovery of auscultation by Laennec. I must, however, ere we begin our journey, beg of you not to believe that I shall either exhaust the subject, or lay before you such a critical digest of the elder literature, as to pass unchallenged. An abler scholar and more laborious compiler would, I entertain no doubt, make both a larger and a more valuable contribution to the treasury of science. I only hope to be able to place before you such a connected outline as may enable you to form a sufficiently practical estimate of the history and progress of the science of the diseases of the heart.

The first links of the chain in the history of medicine lie hid in the unfathomable abysses of the past. No plummet-line of ours finds bottom there. We must needs rest contented with the assumption, that its home and birth-place was the east. Were we to believe all the Chinese historians tell us, their historic records are almost coetaneous with the world's creation. The earlier history of this hitherto singular and unchanging people is shrouded in mystery and myth. One fact seems clear, that for now nearly four thousand years they have preserved the same religion, literature, and customs, untainted by any communication with surrounding nations. Even authentic records are supposed to date 2357 A.C.

Medicine is said by them to have originated from one of their emperors, Hoam Ti, the third of the first dynasty. The presumed period of his reign is 2687 years A.C.; that is to say, many ages before the deluge! However this may be, this Hoam Ti is the accredited author of the famous work *Nuy Kim*, the still infallible organon of Chinese physic. In this work, the theory of the pulse is given with a most wonderful and perplexing subtleness. From this examination of the pulse, they not only recognise the seat of the malady, but judge of its duration and gravity. The method even of feeling the pulse is most complicated. With the first three fingers applied to the wrist, they alternately elevate and depress the finger like a performer on an organ. While proceeding thus, they regard with particular attention the respiratory movements, being persuaded that some intimate relation subsists between them and the arterial pulse. In this way, they arrive at the diagnosis and prognosis. It has even been hinted that the Chinese taught the circulation of the blood; but if so, they certainly entertain singular ideas of the rate of movement. They suppose that the circuit was completed in twenty-four hours; that is to say, it commenced at the lung at three o'clock A.M., and traversed the body by the return of the same hour of the following morning. Such is the summary of the doctrine of the pulse and circulation contained in that wonderful repository of Chinese medicine, the *Nuy Kim*. It is now, however, believed by those competent to the investigation of the matter, that this work is of a very much later date than that attributed to it by the Chinese, either in their ignorance or ridiculous pride. From the resemblance of their doctrine of the pulse to the tenets of the school of Erasistratus, it is probable that the disciples of the great physicians settled in Bactria communicated their theory to the Chinese doctors. (Renouard, *Histoire de Médecine*, vol. i, p. 49.)

We abandon without regret this treacherous path of medical history for that land of wonder and magnificence, ancient Egypt. For it is here we descry the earliest trustworthy historic indications of the existence of medicine. The patriarch Abraham, who lived 1921 years A.C., declared that physicians had existed in Egypt four hundred years before his time; and we read in the fiftieth chapter of Genesis, that Joseph commanded his physicians to embalm the body of his father Jacob. Herodotus also, who visited Egypt in his travels, informs us that the land was full of physicians who practised specially; that is, restricted their vocation to the maladies of individual organs. Thus one treated diseases of the eye, another the diseases of the ear, another those of the chest; so that "specialities" are not altogether a growth of modern civilisation. These facts leave no doubt as to the high antiquity of physic among this highly gifted people. Their writings have not descended to us with further minuteness, owing possibly to the mystic mode of registering their records. We have seen how early and how universal was the custom of embalming the bodies of the dead of all gradations. It is consequently difficult to conceive that the paraschists, or persons employed in this process, should not have gained some knowledge of anatomy, however rude. Clemens Alexandrinus distinctly states that even in these early times state examinations were instituted in anatomy. This much further is recorded, that they not only were familiar with a connection between the nerves of the heart and hand, but also with the fact that the heart gradually increased in weight until the fiftieth year. (Wotton, *Reflections upon Ancient and Modern Learning*.) I am not quite sure whether this statement applies to the older embalmers or to the far later Alexandrian school.

But we must leave for a time this hallowed ground, and follow the thread of history on to Greece. Here, about 450 years A.C., Hippocrates was born; and soon now, under the influence of favouring skies, the germs of genius attained their full fruition. From the date of Hippocrates, medicine began to expand into actual science.

I shall not fatigue your patience by any quotations from the book *De Corde*, which treats of the anatomy of the heart, or that *De Morbo Sacro*, which asserts that this organ, by virtue of its dense tissue, cannot suffer from disease, because the ablest critics have unanimously pronounced them spurious. Of the famous book *De Corde*, it would, as Le Clerc (*Histoire de la Médecine*, p. 125) observes, be the best to convey a grand

idea of the anatomy of Hippocrates, and of its exactitude. It is not, however, among those cited either by Erotian or Galen. Littré (*Œuvres de Hippocrate*, tome i, p. 383) also remarks, that it is evident that the treatise upon the Heart is an ancient work, consulted and even copied by Galen, but the composition of which it is impossible to attribute to Hippocrates. Dr. Adams (*Genuine Works of Hippocrates*, vol. i, p. 115) bears similar testimony. Lastly, Sprengel (*Histoire de Médecine*, tome i, p. 303) is also of opinion that Hippocrates had no knowledge of anatomy. He pointedly states, "As to the knowledge of Hippocrates of the structure of the human body, I do not think that it was acquired by regular dissections. It is true that Galen attributes to him the invention of scientific anatomy, and alleges that the Asclepiads were already skilled in this art to some extent; but I shall presently have occasion to narrate facts to show how little his testimony merits our confidence in this respect. Besides, during the age of Hippocrates, the prejudice still prevailed of interring the bodies of the dead with the utmost celerity. It is consequently very probable that this great physician contented himself with the dissection of animals, like Empedocles, Alcmæon, and Democritus. Such of his writings as bear the impress of authenticity show indeed that, with the exception of a tolerably accurate osteology, he was completely ignorant of anatomy, or, at least, possessed but a very vague and superficial acquaintance with the human organisation."

With regard to the cardiac physiology of Hippocrates, it may be said that he appears to have had some idea of a circulation, it being foreshadowed in various parts of his writings. Perhaps one of the most striking passages is the following:— "The nourishment comes from the internal parts even to the hairs, nails, and the external surface. The same nourishment also passes from the external to the internal parts . . . ." Again: "The veins are distribnted over all the body, and carry the spirit and the movement. They are all branches of a common vein. I confess I know not where it begins or ends; but, supposing a circle, there is no beginning."

Now these extracts are, I am aware, from writings regarded as somewhat apocryphal. They are supposed by many critics to belong to a later period. It would be vain and misplaced to inquire into the tests of the validity of the Hippocratic writings; the only doubt is, whether such tests have not been at times too subtle. The only point now is to examine the internal evidence afforded by the pathology of such writings as all commentators have unanimously agreed in attributing to Hippocrates.

First, with reference to the circulation, as evidenced by the pulse or the art of sphygmology, Galen observes: "The ancients designated as pulse all the movements of the arteries, but they limited the term to such movements as were violent and sensible to the patient. Hippocrates has, first of all that we are acquainted with, used the term pulse,* and was not ignorant of the means of turning it to account; but he has not generally cultivated this department of art." Some of the most important passages in his works are the following, and which perhaps generally justify the criticism of Galen.

"The veins present pulsations round the umbilicus. In acute fevers, the pulsations are the most frequent and strong. The veins of the temple pulsate. Pure wine, taken in larger quantity than usual, occasions pulsation of the veins, heaviness of the head, and thirst. Two veins which traverse the temples pulsate. Feverish patients, who have injected face, severe headache, and throbbing of the veins, are most frequently seized with hæmorrhage."

The above extracts are from Littré (*Op. cit.*), who adds: "There is one passage in the second book of the *Prorrhetics*, which, assuming it not to be spurious, makes exception to Galen's remark: 'One is less liable to err in feeling the abdomen and the veins than in omitting such examination.'"

Again, in one of the most genuine, and perhaps greatest, works of Hippocrates—the *Aphorisms*—in the forty-first aphorism of the second section, he states: "They who, without obvious cause, faint often and violently, die suddenly." And, in the eighteenth aphorism of the sixth section: "Wounds of the heart are mortal." Again, in the sixty-fifth aphorism of the fourth section, he states that "excessive heat of the belly in fevers, and pain at the pit of the stomach, are of bad omen."

Now, I am particularly desirous, once for all, of drawing your attention to the meaning of the term "pain at the pit of the stomach". Its Greek synonyms are καρδιαλγια and καρδιωγμος. The ancients called the pit of the stomach καρδια, because pain originating here at once affected the heart. Foes (*Œconomia Hippocrates*), than whom none knew the subject better, gives many illustrations of the use of the term. So that, in hearing the terms "pain at the pit of the stomach", or "cardialgia", you know the ancients equally alluded to some affection of the heart. Such use of the term is well exemplified in the narration of the case, in the *Epidemics*, of the wife of Hermoptolemus. "Whenever she drank, it was with so much difficulty, that she got up and said that she had a great uneasiness at her heart or pit of her stomach." The treatise upon the epidemics also contains many cases of great interest in respect to our more immediate subject. Hippocrates speaks of the boy of Ertolaus as having, after exercise or mental emotion, a greater palpitation than is ever felt and obvious to any one placing the hand between the umbilicus and cartilage. Another instructive case is the following (*Epidemics*, Lib. vii, Case 30.)

"Polemarchus's wife had a swelling about the windpipe, from quinsey, in the winter, and was very feverish. Upon being bled, the strangling in the throat disappeared, but the fever continued. About the fifth day, her left knee was painful and swollen; something seemed to be gathered about her heart; and she breathed as a man does after being kept under water. Such a sound came from the breast as those impostors make who, in prophesying events, speak from the abdomen, and are thence called ἐγγαστριμυθοι. About the eighth or ninth day, a purging came on, and her stools were many, liquid, tumultuous, and fœtid. Her speech failed, and she died."

The history of this case is deeply interesting. The affection was obviously acute. The swelling and pain of the knee, fever, dyspnœa, peculiar voice, bear strongly the impress of acute rheumatism, associated with pericarditis.

A third most important case of what we should have little difficulty in recognising as acute pericarditis, supervening upon some abdominal affection induced probably by malaria, is detailed as follows:—

"Chartacles had a burning fever, with great bilious vomiting, purging, tumefaction of the spleen, and want of sleep. The third day, he rose early, being troubled with borborygmi, but without pain. He passed a very large quantity of blood from the bowels. After a short respite, lumps of clotted blood again came away. He now began to complain of præcordial anxiety; slight, though general perspiration, succeeded, with a moderate degree of fever. At first, he appeared quite rational; but, as the day advanced, his anxiety and restlessness increased; his breathing slightly quickened; his speech and conduct, by turns, excited and natural, according to circumstances. There was a tendency to syncope, which was not removed by any nourishment administered. Towards night, his breathing became exceedingly difficult. He tossed about the bed, first on one side and then on the other, without being able to obtain one moment's rest. His feet were cold; the head and temples rather hot. Slight perspiration broke out as death approached. Fluids swallowed gave rise to sound about the breast and stomach, and no worse sign could occur; and, while saying that something wanted to pass downwards, he fixed his eyes and expired."

It will, I think, be obvious from this partial analysis of the writings of Hippocrates, that although, with reference to cases of disease referrible to disorders of the circulation, he has most carefully noted the symptoms which presented themselves, and described them in most concise and graphic terms, so that we can most readily recognise the picture, he has not himself stated the proximate cause of such symptoms; that is, given them "a local habitation and a name". This omission is most readily explained on the assumption that the superstition of his time prevented his obtaining an acquaintance with either healthy or morbid human anatomy.

Thus far respecting the presumed pathology of Hippocrates. It would, however, be most unjust towards the Father of Medicine if we passed over his wondrous sagacity in the department of physical diagnosis. This point is one, moreover, of cardinal importance, as showing at how early a period the germs of auscultation appeared, to yield their full bearing only after so many centuries. Speaking possibly of pneumothorax, Hippocrates observes: "The patient having been placed upon a firmly fixed seat, his extended hands are to be supported by an assistant. He is then to be shaken by the shoulder, in order to ascertain upon which side the sound will be developed by disease."

* Ægimius of Elis is elsewhere cited by Galen as the first who wrote upon the pulse; Περι Παλμος, on pulsations. But the age in which Ægimius lived is not known with accuracy, and is said by some historians to be anterior to that of Hippocrates.

According to another very distinguished French physiologist, it is also possible that Hippocrates even employed auscultation with respect to the heart. The following are the remarks of the author alluded to:—"It is probable that the existence of the cardiac sound was known to Hippocrates; for it is attested that this physician occasionally had recourse to the auscultation of the chest." (Milne-Edwards, *Leçons sur la Physiologie*, tome 4ième, p. 33.)

Another remarkable passage occurs in the work *On Ancient Medicine*:—"The air existing and moving in the interior of the body naturally engenders sound and murmur in hollow spacious organs, such as the chest and abdomen; for, when such air does not distend them so as to lie motionless, but permits space for change and motion, then, as a matter of necessity, sounds and murmurs become audible." (Littré, tome i, p. 631.)

The current of history is now deflected to Egypt; but we re-examine this country under far more instructive circumstances. We left it in difficulty and doubt, without the torch of trustworthy history to light up the treasures of its ancient learning. The dawning era of its greatest Medical splendour now bursts upon the view. The impulse given to science by Alexander the Great, at the instigation of Aristotle, lost none of its force under the Ptolemies. Their generous patronage of science made Alexandria the great seat of medical learning throughout the world, and history has rewarded them by linking their names imperishably with the glory of the school they fostered. By their influence and example, the emotions of superstitious horror, awakened at the bare idea of the mutilation of the dead body, were stilled. Such was their ardour in the cause of human anatomy that they descended from their own high office, and, as Pliny relates:—"Ab regibus quoque corpora mortuorum ad scrutandos morbos insecabantur." No wonder that under such banners, volunteers soon crowded, and that the right of anatomy to rank as an independent science was fully vindicated. The value of this acquisition to pathology was incalculable, and well, indeed, have the Ptolemies merited the immortality they have gained.

Foremost in the vanguard of discovery appear Herophilus and Erasistratus; and although the bulk of their writings is lost, perhaps burned at the destruction of the Bruchium Library, still, Galen and Cœlius Aurelianus have left us sufficient data whereby to judge the powers of these ancient fathers of anatomy. We, of course, have only to do with that part of their knowledge which relates to the heart and vessels; but in this department, even, we shall find more than enough to excite our admiration. They have been introduced to our notice, as you may remember, by Celsus, under a most repulsive aspect, "qui nocentes homines, a regibus ex carcere acceptos, vivos inciderint". But we would willingly believe with many, that Celsus was in error in charging such men with so foul a crime, and one so libellous on our common nature. Herophilus, the elder of the two, was born either in Chalcedonia or Carthage, but resided in Alexandria, under the rule of Ptolemy Soter. If we may believe Galen, he carried human anatomy to the highest pitch of perfection. And, indeed, Gabriel Fallopius, a great anatomical discover of much more recent time, declared that he should almost as soon think of contradicting the gospel, as the authority of Herophilus. Among the contributions of Herophilus to cardiac anatomy and pathology, I may remark that he first pointed out the fact, that the pulmonary artery discharged as it were the functions of a vein in carrying black blood to the lungs, and that the veins, on the contrary, performed the office of arteries in carrying red blood to the left auricle. He also first devoted especial attention to the pulse, and saw that the heart was the cause of its beat. He also pointed out the relation of the pulse and the respiratory movement. He distinctly recognised the jerking pulse (*Galen de Pulsibus*). Lastly, Herophilus pointed out the very important pathological fact, that sudden death resulted from paralysis of the heart (*Cœlius Aurelianus*, p. 348).

Erasistratus, born in Ceos, lived subsequently at Alexandria, probably part of the time with Herophilus. He had already acquired high renown by the famous cure of Antiochus, the secret cause of whose illness he discerned to be caused by his passion for his mother-in-law Stratonice.

His anatomical discoveries shed brilliant light. "There are," said he, "certain membranes inserted at the orifices of the heart, through the intermediation of which the heart acts, both for the retention and expulsion of the matters attaining either ingress or egress". He also described the tricuspid or venous valve, pointing out its three curtains, and showed that the valve on the left or arterial side had but two curtains. The upper orifices, viz., those of the arterial veins and the grand artery, have also each three membranes or valves, shaped like the Greek letter sigma, hence called sigmoid. These valves, continues Erasistratus, perform offices with regard to the heart. Those attached to the vessels allowing the ingress of matters, look from without inwards, in order that they may be depressed when pressed upon by the force of the substances entering, and thus rendering the orifices patent, for it is not to be supposed that these matters enter as into some inanimate receptacle, but that the heart attracts them during its diastole, as blacksmiths' bellows suck in air; and it is in this manner the heart becomes filled. The membranes, valves, vessels, which serve for the egress of matters, are turned in the contrary direction, that is to say, they look from within outwards in such a manner that, being rapidly opened by the fluids passing, they render the orifices patent at the time that the heart expels its contents. These valves accurately close the orifices, and permit no reflux, just in the same manner that the membranes of the vessels serving to introduce matters close the orifice during the systole of the heart, permitting no backward passage of that which has once entered. He taught, also, that the great artery was the reservoir of the pneuma or subtle spirit, while the great vein was the reservoir of the blood. These reservoirs divided and subdivided into canals of inconceivable minuteness (capillaries). Erasistratus had embraced the opinion of Aristotle; for he had stated, in the first book of his treatises on fevers, that the heart is the origin at once of both veins and arteries. In another place he says, the veins originate there, where the arteries, being distributed over all the body, have their commencement, and empty themselves into the sanguineous (right) ventricle of the heart. The artery, on its part, begins where the veins begin, and empties itself into the pneumatic (left) ventricle of the heart. Thus Erasistratus came very near the circulation of the blood anatomically, and very far from it physiologically; since if, on the one hand, he admitted that the veins began where the arteries began, on the other hand he believed that the arteries simply contained air (Littré, *Op. cit.*, p. 221). Erasistratus deduces from his anatomy certain pathological inferences. He admits that the contents of the veins never, in health, mingle with those of the arteries; but when any cause perturbs the system, then the blood passes into the arteries, and fever and inflammation result. This extract is the more remarkable, inasmuch as Borhaave, in comparatively our own times, made such *error loci* of the blood the basis of his famous theory of inflammation. Even now, obstruction of the capillaries plays a leading part in the phenomena of inflammation and sympathetic fever. As Le Clerc observes justly: "It is most strange, that with anatomical knowledge so accurate, Erasistratus should have been so much under the influence of prejudice as to imagine that the heart and arteries contained air, and even when challenged by his senses, evaded the evidence by this subterfuge, that when the arteries were opened the air or pneuma escaped unseen, the blood instantly taking its place." This perverse view of so preeminent an anatomist justifies, perhaps, the hope before expressed, that Celsus had scandalised both himself and his great contemporary. Had Erasistratus dissected living men, is it possible that he could have fallen into such an error? He who could not conceive the fact that the veins and arteries contained the same fluid, would he have entertained the slightest doubt, had he really cut up men alive? Could he have contested the existence of blood in the arteries, would he have maintained that while the vena cava was distended with blood, the aorta only contained the spirit or air that it received from the lungs by means of respiration?* The charge made against Erasistratus and Herophilus is about on a par with the fable of Medea, who was supposed to have boiled men alive in her cauldron, because she was the first who resorted to the use of the warm bath. In the same manner, that great restorer of anatomy among the moderns, Carpi, was charged with having dissected two Spaniards alive, and condemned to exile. His whole crime consisted in his having dissected the bodies of two persons, dead of smallpox, in order to investigate the cause and effect of the disease, at that time new in Europe (Eloy, *Dictionnaire Historique*, etc., vol. ii,

* The views of Erasistratus respecting the mechanism of the chest movement during the respiratory act, are too important to omit. "The thorax," he states, "expanding, induces, as a consequence, the expansion of the lungs, which, at the same time, fill with air. This air passes to the extreme divisions of the bronchi, and from these termini into those of the anastomosing arteries of the lungs, from whence the heart in its dilatation attracts it to carry it through all parts of the body by means of the great artery [aorta]." (Galen, *De Locis Affectis*; also, quoted by Portal, *Histoire de l'Anatomie et de la Chirurgie*, tome i, p. 48.)

p. 147). Did not, also, the immortal Vesalius share a similar fate, on suspicion of having opened a Spanish gentleman alive? I dare say you know the tale, and will spare me further digression.

There are a few disciples of the school of Alexandria to whom I must briefly allude to in connexion with my subject. The first is Demetrius, of Apamea. Cœlius Aurelianus (*op. cit.*) testifies to the success with which he cultivated general pathology. He divided hæmorrhages into two classes; the one resulting from laceration or decomposition of the vascular walls, the other depending upon extreme tenuity or atony of them. This view has also served as the basis for the theory of a celebrated master in pathology, Gaubius (*Morb. Chron.*, p. 390). Bacchius, also, of Tanagra, acquired celebrity by his theory of hæmorrhage. To the above-mentioned causes, he added a fourth, actual transudation through the capillaries; and it is a question whether at the present moment any other solution could be given of such condition (Sprengel, *Op. cit.*). Bacchius, too, was the first who had sufficient originality and energy to disabuse himself of the old and fatal error, and to maintain that the pulse should be manifested at the same time in all parts of the body, because the arteries are constantly filled with blood (Galen, *De Diff. Puls.*, lib. 4, p. 47). For this supposed heresy, he incurred severe animadversion from the other disciples of Herophilus. Xenophon, of Cos, another follower of Erasistratus, first showed that hæmorrhage from an artery might be arrested by the application of the ligature. Lastly, the justly celebrated Cassius Iatrosophista attributed asphyxia to exhaustion of the pneuma in the arteries, and fever to increased heat augmenting the mobility of the pneuma, and thus quickening the pulsation of the arteries. This looks very much like the modern theories of fever and inflammation being caused by increased oxydation of the blood elements.

There is nothing more relative to the famous school of Alexandria in the way of cardiac pathology that requires any arrest of our attention. We now pass on to the state of this science as evidenced in the writings of the physicians of Rome. Fortunate, indeed, must have been the condition of this remarkable people if there is any truth in the assertion of Pliny, "that the Romans existed more than five centuries without physicians". And even when physic became necessary to the growing refinements of the people, it was of imported, and not of indigenous growth. The first great writer whose works have descended in all their purity to posterity is Cornelius Celsus. Some historic doubt invests the history of this accomplished man. It appears probable, however, that he flourished at the commencement of the first century of our own era, and composed his work *De Re Medicâ* during the reign of Tiberius Cæsar. With what Ciceronian elegance he wrote, and how extensive his knowledge in all departments of ancient philosophy and science (for it was encyclopædiac) it is unnecessary to make mention, farther than to prove that he would have best reflected the spirit of the past as well as his own time. Although, perhaps, the greater portion of his work is devoted to surgery, the first books treat of medicine. It is here that he describes the cardiac passion in the following terms:—"* * * This is nothing else than excessive weakness of the body, the stomach being languid, and this is known to exist when the pulsation of the arteries is small and weak, and when sweat bursts forth profusely, both as regards quantity and duration, over the entire chest and neck, even to the head, the legs and feet remaining cold. This is the acute form of the disease. * * *" The first thing to be done in the way of treatment is to apply a cataplasm over the precordia (by this term, Celsus clearly means the part immediately above the diaphragm). He subsequently directs treatment to the weak stomach, and eventually expresses a fear "that even when the patient appears out of danger, there is ground for apprehension lest he relapse into the same state of debility". It is difficult to comprehend what Celsus meant by this last sentence: in all probability, more was involved here than a mere weak stomach would imply. In the second book he discusses wounds of the heart, *de corde percussâ*, in the following terms:—

"When the heart is wounded, much blood is lost, the circulation becomes languid, the surface most pallid, cold perspiration breaks out, of peculiar odour, the extremities grow cold, and, finally, death ensues."

This very obscure and imperfect description of the affections of the heart clearly proves to my mind that, until a later period than that of Celsus, we have not the slightest evidence of the existence of any scientific pathology of the heart. To that period we must now hasten.

Illustrations of HOSPITAL PRACTICE:

METROPOLITAN AND PROVINCIAL.

BIRMINGHAM GENERAL HOSPITAL.

MALIGNANT DISEASE OF THE BLADDER.

Under the care of James Russell, M.D.

[*Clinical Clerk*—Mr. T. H. Bartleet.]

Case I. H. W., aged 42, a labourer, was admitted on February 18th, 1859. In the summer of 1855, the patient was injured in the region of the loins; he kept his bed in consequence of the accident for a month, and it was six months before he was able to return to his work; during this period, his urine passed from him involuntarily, and a catheter was used occasionally. During the following twelve months, he had occasional pain in his back, after a hard day's work, and frequent calls to pass urine. Increase of pain in his back again compelled him to leave work.

He began to pass blood from his bladder fourteen or eighteen months ago. For the first six months, this symptom was constantly present; but subsequently it presented itself at intervals of about three weeks.

At this period, he saw Dr. Russell, at the request of his surgeon, Mr. Orford. The chief complaint then made, was of pain in the right loin, often striking down the course of the ureter into the testicle, which was frequently retracted. The urine contained a considerable quantity of blood, but repeated examination failed in affording any information respecting the source of the hæmorrhage.

During the last six months, the patient had felt pain in the region of the bladder, more severe at night; and when his bladder was full, more severe also when he lay down; the pain was generally of an aching, though occasionally of a shooting or throbbing character. His urine had passed from him involuntarily, more or less during the last year, but especially for three or four months.

On entering the Hospital, he was pallid and cachectic. He complained of severe pain in the region of the bladder, which had kept him awake for many nights; the pain was aggravated by micturition; and the passage of urine was attended with considerable spasm.

A catheter having been passed into the bladder, about a quarter of a pint of muddy looking urine was drawn off: the *last portion*, however, was largely intermixed with fresh blood. The instrument appeared to meet with some obstruction when an attempt was made to turn it towards the left side; on the right side, movement was free. The result of an examination by the rectum was unfortunately not recorded; but, in the pubic region, a distinct hardness was felt, running along the left of the median line.

A recent coagulum was found entangled in the eye of the catheter, in which were engaged small mortar-like portions of triple phosphate. Under the microscope, the coagulum presented numerous spherical cells, faintly granular, of an average diameter of 1-830th of an inch, containing each a large nucleus.

During the patient's residence in the Hospital, he suffered continual pain in the vesical region. He was troubled with constant desire to micturate, passing only a very small quantity of urine, which still left the bladder considerably distended. The process of micturition was attended with difficulty. His urine dribbled away incessantly; his shirt was constantly damp; and his clothes had a urinous odour. Catheterism was required daily; the last portions of urine always contained a large quantity of blood. The urine was ammoniacal, sometimes quite free from blood; at others, loaded with blood, and containing coagula and crystals of triple phosphate. On one occasion only were cells, of the character of those described above, discovered in the urine, although it was repeatedly examined.

The treatment consisted of opiate suppositories and injections; of astringents, tonics, and restoratives. An attempt was made to control the bleeding by an astringent injection into the bladder; but the proceeding only increased the hæmorrhage, and caused such severe suffering that the patient absolutely refused to permit its repetition after the second trial.

He left the Hospital, at his own request, on March 17th; and placed himself under the care of Mr. Allcock of Smeth-

wick, who kindly sent word to Dr. Russell of the patient's death on November 22nd, and procured permission to make a *post mortem* examination. His symptoms underwent no important change after his discharge.

Sectio Cadaveris. Emaciation was not far advanced. The muscular coat of the bladder was much hypertrophied; the mucous coat was entire. A very soft friable fungus occupied the lower fundus of the bladder, forming two very ragged lobes, running up on each side of the trigone, but leaving that space intact, and reaching very nearly to the orifice of the ureters. It was evident that the fungus had undergone much diminution in bulk, in consequence of a process of degeneration; and Mr. Allcock stated that the urine had latterly contained pus-like matter. The orifices of the ureters were perfectly free, and, in the state of the fungus at the time of the examination, not liable to be obstructed by it. Both ureters were dilated to the diameter of a swan's quill, and were much thickened. The kidneys were reduced to less than one-half their normal size; each one was imbedded in a considerable quantity of firm, condensed, adherent fat. The tissue of the kidneys was very pale, the pelves and infundibula much dilated, and the cortical portion greatly diminished in quantity. The renal cells were completely atrophied, scarcely one fully formed could be seen. Some tubules were contracted and atrophied; others, on the contrary, were dilated. Minute globules of fat were freely scattered through the tissue. The vessels of the pelvis, the lumbar glands, the liver, and the spleen, were healthy. At the base of the right lung was a mass of diffused suppuration; and a small abscess existed in the apex of the left.

The following case, which was under the care of Dr. Russell at the Dispensary, presents much resemblance to the one just narrated:—

Case ii. W. R., aged 66, beadle, came under treatment on November 28th, 1855, with profuse hæmorrhage from the bladder. Six months previously, he had been taken suddenly with hæmaturia, which continued profusely for two days, and did not completely subside for a fortnight. Between the former and the present attack of hæmorrhage, he had been in good health, and had suffered from no symptoms referrible to his bladder, excepting that he had frequently felt pain at the extremity of his penis, and that for some months, he had passed his urine more frequently than before, the quantity voided each time being unusually small; but during the three weeks preceding the second attack, his urine had sometimes passed involuntarily.

He complained of a sense of pressure at the lower part of his abdomen, but had no symptoms of disordered health, and two days after the setting in of the hæmorrhage he had been walking about as usual.

His urine had the aspect of pure blood, and contained a small, loose clot. On examination, an unusual amount of resistance was opposed to deep pressure behind the pubes, and when the finger was introduced into the rectum, a swelling was distinguished in the fundus of the bladder much like an enlarged prostate, excepting that the tumour wanted the firmness and the regular outline of that disease.

Among other remedies which were employed in the course of the case, an astringent injection was thrown into the bladder. The eye of the catheter carried away a small, solid, fungoid-looking mass, about the size of a horse-bean; this was found to be composed entirely of cells, caudate, fusiform, or riband-shaped, containing large nuclei. On one occasion only were any of these cells seen in the urine (although very many examinations were instituted), and then their number was very small; on other occasions, a copious dirty-brown sediment was deposited, which contained bodies, as to the nature of which, it was uncertain whether they were nuclei, mucus-globules, or white blood-globules.

The hæmorrhage continued during three weeks, with scarcely any diminution in its quantity, the urine having generally the aspect of unmixed blood. Astringents of every kind, the local application of ice, and the injection of iced water into the rectum, entirely failed; but at the end of the period mentioned, the bleeding suddenly and entirely ceased. An astringent injection into the bladder was attended with so much pain that its use was suspended after the first repetition. The patient suffered from irritation of the bladder, and from frequent calls to pass urine. The effect of the copious hæmorrhage speedily manifested itself, by very severe symptoms of anæmia and by rapid emaciation, and as the hæmorrhagic symptoms increased, the vesical irritation increased likewise. He did not, however, suffer much pain, excepting on one occasion, when, for four or five days, he endured the most agonising pain, accompanied by violent straining, seated at the neck of the bladder, and clearly referrible to the passage of urine. It was during this attack of pain that the bleeding ceased (Dec. 16); it did not return, though the urine contained albumen even so late as the end of the following February.

With the cessation of hæmorrhage, strength began to return, and his health recruited very rapidly, so that he was able to leave his house before the beginning of March. In the following May, Dr. Russell was informed by his wife, that some hæmorrhage had again shown itself, and that irritation of the bladder had returned, so that he could scarcely walk a street's length without stopping to make water, and he was obliged to micturate almost every hour during the night. Dr. Russell did not see him again, but learnt that he died in the middle of the following year, and that on *post mortem* examination a very characteristic tumour of villous cancer was found in his bladder.

Remarks. The diagnosis of malignant disease of the bladder is necessarily attended with considerable difficulty, at least in the early stages of the disease; but in the former of these two cases, the difficulty was still further increased by the effects of the injury to the loins, which preceded the development of the symptoms occasioned by the fatal malady. There can be no doubt that the pain which was present in the early history of the case was the consequence of the injury; but it is remarkable that the pain accompanying the first indication of the presence of the fungus was also connected with the kidney, and preceded the pain in the region of the bladder by many months. Under these circumstances, the diagnosis naturally inclined to the presence of calculus, as a consequence of injury sustained by the spinal cord, and the patient was repeatedly sounded, at the suggestion of the suspicion thereby excited. No doubt the fungus, by its position, had interfered with the free discharge of urine into the bladder, and had thus caused both the pain and the dilatation of the renal cavities, together with the atrophy of the renal tissue.

The very large amount of the hæmorrhage was a leading symptom in both cases, and, when present, probably affords the best diagnostic evidence of malignant disease of the bladder or kidneys, since it is difficult to conceive any other disease of those organs which could produce so copious a discharge of blood.

In both cases, however, confirmatory evidence, of the most conclusive character, was obtained by the removal, in the eye of the catheter, of a small portion of the tumour, and subsequently, on a single occasion in each instance, by the presence of peculiar cells in the urine. Although the presence of cancer-cells in the urine affords the most satisfactory proof of the existence of malignant disease, yet we can hardly hope that such evidence will be obtained in a large proportion of cases; the cells not being cast off by the tumour when in its normal condition, their appearance must depend on the occurrence of sloughing or of ulceration, and is therefore accidental; not to mention the obvious difficulty of discovering such minute bodies amongst the large amount of sediment occasioned by the presence of a large quantity of blood.

The two cases are contrasted by the presence, in the former, of very severe pain in the region of the bladder, and of retention of urine and its involuntary emission, and by these symptoms being almost absent in the latter. The position of the tumour, near the orifice of the urethra, probably explains two of these phenomena in the former case. As regards the pain, its occurrence is always a matter of considerable uncertainty in malignant disease; in the instance now under consideration, it probably depended on a process of sloughing or ulceration in the tumour.

With respect to treatment, we have to notice the entire failure of astringents in arresting the hæmorrhage, and extreme intolerance of an astringent injection on the part of the bladder. This same intolerance was exhibited in another case, probably of the same disease, lately under Dr. Russell's care, in the Hospital. In this case, an anodyne injection was attempted; but the difficulty was overcome by employing a common ear syringe, the patient being a female, so as not to introduce an instrument within the bladder. A solution of belladonna, introduced in this manner, afforded very considerable, though unhappily only temporary relief, to severe pain. Acting on the information thus obtained, Dr. Russell has again attempted an astringent injection in another case, which presents every symptom of malignant disease of the bladder occurring in a male; but pain and temporary increase of bleeding resulted. Hence it would appear that local applications, to fungoid tumours of the bladder, do not promise much benefit, since it

is not likely that the bladder will endure an astringent solution of sufficient strength to close the bleeding vessels; and failing in this object, the presence of the injection seems to be positively injurious.

Original Communications.

THE PATHOLOGY, DIAGNOSIS, AND TREATMENT OF CARDIAC DISEASES.

By W. O. Markham, M.D., F.R.C.P., Physician to St. Mary's Hospital, London.

VI.—Treatment of Pericarditis. General Remarks; Bleeding; Mercury; Opium; General and Local Treatment; Paracentesis of the Pericardium; Pericardial Adhesions.

[*Concluded from p. 997 of vol. for 1859.*]

The *treatment of non-rheumatic pericarditis* requires no special consideration. The treatment is mainly that of the particular disease with which it happens to be associated.

Paracentesis of the Pericardium has been recommended and practised in certain cases where large collections of fluid have taken place in the pericardium, and have resisted the ordinary methods of treatment employed for promoting their absorption. The results of the operation in the limited number of cases hitherto recorded cannot be considered as satisfactory; but it must be admitted that no just conclusions as to its real value can be drawn from them, for they were cases in which the effusion was excited and maintained by the presence of tubercular or carcinomatous disease, in which the lungs and pleura were also more or less seriously damaged, and in which, therefore, a permanent cure was not to be expected.

The operation, as far as we can judge of it *à priori*, does not appear likely to be productive of any injurious consequences, if carefully performed; and the only objection to its use, in such cases, seems to be, that it holds out no hope of permanent benefit. But there are cases, undoubtedly rare, in which I should not hesitate to recommend its performance—cases, for instance, in which a large quantity of fluid has been rapidly exuded into the pericardium, and, by its mechanical pressure upon the heart and lungs, seriously interferes with their actions. The simple puncture of the pericardium, inflamed and distended with fluid, can hardly be considered, under such circumstances, as even so important an operation as puncture of the pleura. It must be admitted, however, that in the acute and early periods of the pericarditis, the absolute necessity for the performance of the operation can with difficulty be shown. In one case, in which I contemplated the performance of the operation, I found the patient, on the following day, so much recovered as to render its performance inadmissible.

Still I am inclined to think that the operation was called for in the following case. The patient had been ill four or five weeks, and died at last furiously maniacal. Here, during life, extensive dull percussion had been observed across the front of the thorax. After death, the pericardium was found distended with three pints and a quarter of yellow lymph, and stretched twelve inches across the thorax; the pericardial surfaces were covered with false membrane. There was no other disease whatever to account for death. The lungs were remarkably compressed upwards and backwards by the pericardial effusion, but were otherwise perfectly healthy. The following case, recorded in the seventh volume of the *Pathological Transactions* by Dr. Barker, is also one in which we may fairly surmise that the operation would have been of service. Here the pericardium contained about four pints of pus, and the lungs were much compressed. There does not seem to have been any other disease. The man was young and healthy, and his prominent symptom was oppressed breathing. In fact, it would seem as though, in this case, death had been caused by the mechanical pressure of the purulent fluid on the heart and lungs.

J. F., aged 26, a labourer, never very healthy, was attacked with pain of the left side of the chest three weeks ago. Breathing, 45 per minute. Front part of the left side of the chest larger than the right. Excessive dulness on percussion, reaching above to the lower margin of the left first rib; below, to the lower margin of the thorax; an inch to the left of the left nipple; and an inch to the right of the sternum. Elsewhere, the chest was resonant. The heart's impulse nowhere perceptible; its sounds feeble and distant. He died six days after admission into St. Thomas's Hospital.

The most appropriate spot for puncturing the pericardium is in the fourth left intercostal space, about three-quarters of an inch from the sternum, in order to avoid the internal mammary artery. Iodine injections have been thrown into the pericardium by Aran and others; but their use does not appear very clear.

I have not thought it necessary to say anything of what is called chronic, as distinguished from acute pericarditis. The term is now nearly obsolete. In both cases, the inflammation and its consequences are alike; the difference being, that in the one case—the acute—the inflammation runs its usual course; whilst in the other—the chronic—the cause provoking the inflammation continues still in action, and therefore prevents the inflammation coming to its ordinary, and so to say, natural conclusion.

VII.—Prognosis of Pericarditis.

It may be gathered from the above, that rheumatic pericarditis usually runs a rapid course, and that the subject of it, in a first attack at least, almost invariably recovers from its immediate effects. Judging, indeed, from the past history of this inflammation, we may infer, that since the use of large bleedings and mercurial salivation have been abandoned in its cure the disease has become much less fatal.

Unfortunately, however, rheumatic pericarditis rarely fails to leave behind it, and especially in the young, marks of permanent mischief done to the heart, pericardial adhesions, disorganisation of its muscular structure, and above all injury of its valves, caused by the endocarditis, which so very frequently accompanies pericarditis. It is impossible, therefore, to form a favourable prognosis of the health of a person who has been once attacked with rheumatic pericarditis, for the heart, in such cases, appears especially predisposed to a repetition of the attack. Rare, indeed, are the cases in which the heart once attacked, escapes permanent injury; rarer still those in which it remains ever after free from a repetition of the attack. Sometimes the injury is too slight to occasion symptoms such as may warn the patient of its presence, but is still marked enough to declare itself to the ear of the physician. Sometimes, again, when the injury has been more severe, the patient is conscious in himself, that he is not the man he was before the attack; his breathing is shorter and quicker; he has an occasional cough; he is not able to undergo the exertion which he was once equal to; occasional palpitations also trouble him, especially if he walk fast or run. In short, he now bears about him, in a more or less marked form, the symptoms of heart disease. In all such cases, when positive signs of injury done to the heart remain—irregular action, or abnormal sounds—the patient must ever be the subject of watchful care. To him, if to any one, the motto of Corvisart is truly appropriate—*adhæret lateri lethalis arundo*. A second attack of inflammation will, we must fear, still further disable the heart's textures; or gradually, and in a chronic way, a slow process of disease—degeneration—may affect the imperfect valve or the injured muscular structure; and thus the imperfection will be increased, so as at length to manifest itself in symptoms to the patient, as well as in signs to the physician's ear.

Happily, there is no class of chronic maladies in which the medical art is of more avail in the relief of symptoms, and by its prophylactic measures in warding off further attacks of the inflammation, than in this, provided only the subjects of them are willing to submit to treatment, and are, by social position, enabled to bestow the necessary attention to their bodily condition. Under such favouring circumstances, it is really surprising how life may be long preserved, even when the structural disorganisation of the heart is very considerable. But, among the poor, those who are thus affected have but small chances of prolonged life. They are still exposed to the causes which were the original sources of their malady; and their very exertions to gain the means of living increase the severity of the symptoms, which are destroying them. There are no cases, met with in hospital practice, whose early progress is more sad to watch than these. Removed from the immediate provoking causes of their sufferings, and subjected to proper hygienic rules, the improved change in the bodily condition of such patients is often surprising. The dropsical symptoms, the difficult breathing, the præcordial pain, the

palpitations, etc., quietly disappear, and the patients after a time leave the Hospital, with the belief that they are cured of their disease. Then, once more they return, as they must, to their labours, and once more these labours, and the other attendant circumstances of their condition, provoke the rapid recurrence of the evils, which they vainly hoped they had for ever left behind them, when they quitted the Hospital. From such persons prognosis has nothing favourable to offer.

THE PHYSICAL CONDITION OF THE MUSCLES DURING MYALGIA.

By Thomas Inman, M.D., Physician to the Liverpool Royal Infirmary.

In a series of short papers, and at greater length in a book, I have endeavoured to call the attention of the profession to the fact, that a vast number of symptoms once supposed to indicate inflammation of internal organs, rheumatism, neuralgia, hysteria, and a variety of other diseases, are due in reality to painful affections of the fleshy or tendinous parts of muscles.

The main points established are, that whenever muscles have been excessively used (proportionally to their strength) they become the seats of pain, tenderness, etc., which last a variable time, and that this is attended with cutaneous soreness and tolerance of steady pressure; and while, in some instances, the extension of inflammation from neighbouring parts to the muscles causes the preceding symptoms to be produced, so, in other instances, overexertion in muscles may be carried to such a point as to give rise to genuine myositis.

I have long been seeking for an opportunity to ascertain the probable condition of the muscles in myalgia from excessive action, and having obtained it, I think that the profession will be interested with the result of the investigation.

Two methods are open for adoption; one, to examine into the physical condition of the muscles in those who have died of tetanus, in which we have most intense muscular overexertion; another, to examine the muscles of animals in whom, prior to death, circumstances assure us that there must have been excessive muscular action. The sole difference between these two is that in the former case the muscular action is continuous, and the circulation of the blood comparatively inactive, while in the latter it is intermittent, and the circulation is energetic. As this difference is one of degree rather than of kind, it is natural to conclude that there will be certain resemblances between the appearances in one set and the other, though at the same time certain differences might be anticipated from the differences between the circumstances.

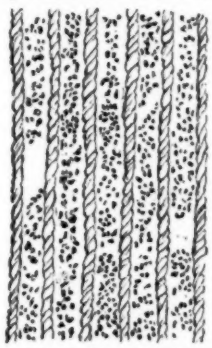
We will adopt both methods, and examine first the condition of the muscles in those who have died of tetanus. Externally we find them firm in texture, pale in colour, and marked by purple spots. Microscopic inquiry shows that their blood-vessels have been emptied, that many of the muscular fasciculi have been ruptured, and that each of these fractures is attended with laceration of blood-vessels, and extensive extravasation of blood between and around the broken fibres. As far as my observation has gone, ecchymosis into the sheaths of muscles, or between the muscle and the skin, is not common in tetanus. In case of recovery from tetanus, the muscles remain rigid and useless for a long period, but rarely, if ever, inflame and suppurate.

I have known two instances in which rupture of fibre, and probably intramuscular ecchymosis, have occurred during life. Both were in gentlemen, and the occurrence took place while running for a long leap. The fracture occurred half way down the biceps cruris; it was attended with sudden and acute pain, and followed by local rigidity and tenderness for many weeks.

We have, then, the broad fact before us, that excessive muscular action will produce rupture of muscular fibres and their associated blood-vessels; and we have reason to anticipate that a similar effect may be produced by a smaller, yet still excessive, amount of such action. We call all muscular action *excessive* which is followed by stiffness, pain, soreness, cramp, or genuine inflammation.

As sportsmen say that after a hare has been well "coursed," or hunted with beagles, if she escape, she is next day, and for a long period afterwards, so stiff (and sore?) as to be unable to move, and that very frequently she evades the dogs only to die from her exertions to escape, it became a desideratum with me to secure a well-coursed hare, one in whom, had it lived, stiffness and immobility would certainly have ensued. Such an animal I have, through the kindness of a friend, recently obtained, with the assurance that none, during the season, had given the dogs a longer run.* On removing the skin, the following was the appearance presented:—The whole of the muscles, where there was no ecchymosis, were as pale as the breast of a fowl, instead of the ordinary red brown colour usually presented by hares. Excessive ecchymosis existed about the head and neck, which was due to the greyhounds' teeth; and there were some other spots about the loins, which were probably due to a similar cause. In addition to these, however, there was very extensive extravasation of blood above the shoulders, along the whole course of the longissimi dorsi, and about the upper parts of the thighs, both on the posterior and the ventral aspects. The whole of the abdominal muscles were covered, externally, with a layer of extravasated blood, and the muscles themselves were purple-black. The peritoneum and bowels were of an equally dark colour, with extravasated blood. The legs and shoulders were apparently healthy, yet a close investigation showed that there were small ecchymoses in the substance of the muscles, and under the fascia. On cutting open the longissimi dorsi, they were found to be very dark in colour, very soft, and so brittle in texture that the fibres readily broke during manipulation. The fibres of the white muscles were also very friable. There was no physical change noticed in the tendons and fascia, except where they were bathed with blood, bloody serum, or simply serum.

On making sections for the microscope, the greatest care was taken not to destroy the natural appearance during manipulation; and sugar and water were employed to prevent the blood from being dissolved out. The first thing noticed (with a half-inch object glass of Powell and Lealand's) was that lines of extravasated blood accompanied every muscular fibre in the abdominal muscles, and about every third fibre in the longissimus dorsi, and every tenth fibre in the crural muscles. This



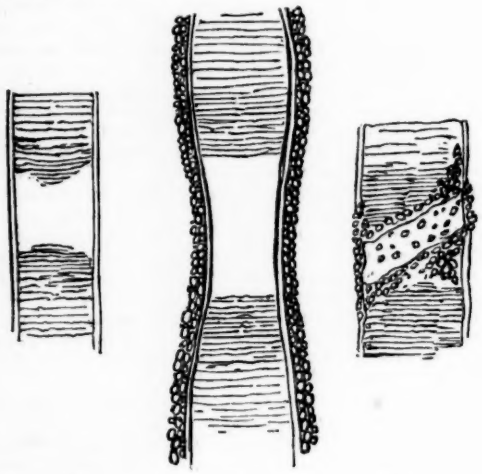
Muscular fibres from abdominal muscles of coursed hare, shewing absence of striæ, extravasated blood between the fibres, and ruptures of various kinds. When the human heart is soft, partly fatty or atrophied or very feeble, the muscular fibres have an appearance very similar to the above.

gave sections, of the first, an appearance similar to that of the pyramidal bodies of the kidneys. The next thing which attracted attention was that the transverse lines were very indistinct in the vast majority of the fibres in all the muscles. After a close investigation, it was seen that many of the muscular fibres were ruptured through their "sarcine," the sarcolemma remaining entire. At first, I attributed this to some accidental violence during manipulation, and made a series of observations accordingly. The question was ultimately set at rest by my finding, in an abdominal muscle, a ruptured fibre with an accumulation of extravasated blood around the fractured portion. The sarcolemma being entire, no globules were seen between the divided "sarcine". I found no fibres ruptured completely across.

On carefully examining sections from various parts, it was ascertained that ruptured fibres were most common in the abdominal muscles, where the amount of ecchymosis was the greatest; next to these, fractures were most common in the lumbar region; and next to these, in the crural extensors. I found no fractures in the scapular region, nor did I find any laceration of fasciculi. In every instance the rupture was confined to individual fibres. In some there was a bulging of the

* It was run for twenty minutes, and completely exhausted the dogs After being killed, it was marked, and forwarded to me.

sarcine above and below the rupture, while in others the division was a simple *crack* across it. In some the sarcolemma retained its usual appearance, in others it was stretched out, so as to appear like a delicate cord uniting the separate ends of the sarcine. In some instances, the whole fibre in view was surrounded by coagulated blood; in others, one or two adherent blood-corpuscles could alone be seen. I send sketches of the appearance.



A. B. C.

A. Ruptured fibre, with indistinct striæ.
B. Ruptured fibre, with layer of extravasated blood outside the sarcolemma.
C. Blood-corpuscles outside the sarcolemma, but around the ruptured fibre.

This, then, being the condition to which the muscles of a hare are brought from excessive action, it is not straining analogy too far to assume that in a man who had overstrained his muscles as "poor Puss" had done, a similar state of things would be found, had we an opportunity for examining him; and it is easy to understand how such a condition would be attended with cutaneous tenderness, prolonged soreness, great disinclination to use the bruised organs, and severe suffering if the action was continued daily. We can readily see, with this physical condition of the muscles, how inflammation might readily supervene, in cachectic constitutions, upon the injury done, as an abscess occasionally follows a bruise, and how it would be difficult for the muscles to recover their healthy state without a large amount of rest, or a great reparative power in the system, or a long apprenticeship of pain. If the foregoing reasoning be valid, it is equally valid to assume that an amount of exertion, less than that we have described, might produce an analogous state of things, though of less severity. If so, we may conclude that in such myalgic cases as we have previously described, there is less or more rupture of muscular fibre, laceration of blood-vessels, and extravasation of blood.

It must next be noticed that the above phenomena are due to *excessive* muscular action, and we must pause to inquire what is the signification of those words. In a previous communication I have endeavoured to prove that the standard by which *excess* must be judged is not the general average of human exertion, but the powers of the individual—*e. g.*, a daily walk of twenty miles is not excessive exertion for a country postman, while he is healthy, but a walk of twenty paces is excessive exertion for that postman when ill with typhus. A feeble woman, therefore, is quite as obnoxious to suffering from overexertion, though she may never leave the house or her bedroom, as is a healthy man or a hunted hare.

Our chain of argument would be strengthened if we could show that the muscular fibres will fracture and the blood-vessels give way in the weakly, under a less amount of force than they do in the strong. I am unable to give demonstrative proof of this, and must content myself with the best available analogy.

1. Toleration of muscular exertion is in direct proportion to a muscle's *tone—i. e.*, firmness, hardness, and development. In strong muscles, "soreness" is unknown, except from such very prolonged exertion as "pumping at sea", a thirty hours "march", a long day at the oar, etc.

2. Myalgic pains are severe in the direct proportion to the atony or softness of muscles; they are, therefore, most common in those whose system has been reduced by cachexias of various kinds.

3. Experience in the dead-house and dissecting-room tells us that the muscles of certain corpses give way sooner than those of others; *e. g.*, it is not an uncommon thing, when dissecting the upper extremity, to find that both the pectorals are torn through by the simple weight of the arm. This easy rupture occurs only in those dying of cachexia. In such corpses, too, it is that the blood-vessels are commonly broken by "injection". We further know that those hearts are most liable to rupture whose tissue is pale, soft, and friable, and whose fibres are indistinctly marked with striæ; and we also know that when cardiac rupture does occur, it is the result of very trifling over-exertion, if there can be said to be over-exertion at all. The ecchymosis under the skin, and the hardness and other phenomena characteristic of myositis in the legs of scorbutic seamen, lead us to infer that a condition of things exists in them resembling that recognised in the tetanic patient or the hunted hare; and if it do exist, it cannot be from absolutely excessive muscular action, but from exertion disproportionate to the contractile power.

4. Experience amongst the living tells us that the blood-vessels are sooner ruptured in some persons than in others; that is to say, that some will have ecchymosis from a touch, a pinch, a blow, or other trifling injury; while others will endure far more violence without any extravasation of blood whatever; and, if we classify these, we shall find that the tendency to "breaking of blood-vessels" is great or small according to the cachectic condition of the individual, and *vice versâ*. Thus, accidental hæmorrhages into the muscular, mucous, submucous, cutaneous, and subcutaneous parts, are common in scurvy, in purpura, and in typhus; they are not uncommon in phthisis, scarlatina, Bright's disease, and general asthenia; they are very rare in the healthy countryman or robust sailor. It is amongst the former that we find myalgic pains are the most severe, prolonged, and intractable. If, then, we find that the cachectic are, *cæteris paribus*, far more liable to rupture of muscular fibre and of blood-vessel than are the strong, we are justified in the belief that such fracture will occur from a smaller *absolute* amount of muscular effort in the former than in the latter (the *relative* muscular effort is perhaps *greatest* in the weak); consequently, that there is nothing improbable in the belief that *excessive* exertion in the delicate and feeble, even though the effort seems to us very trifling, will produce similar painful effects to excessive exertion in the strong. But it is a physiological fact of great interest, that, as a general rule, the weakly suffer pain from any given cause to a far greater extent or proportion than the strong; *e. g.*, a bad tooth does not trouble us at all while we are well; but if we get "pulled down" in any way, that same tooth will produce both odontalgia and neuralgia, both of which complaints may be removed by full doses of quinine or other tonic, which builds us up again, the bad tooth still remaining the same. Consequently, we judge that the muscular and vascular ruptures, which are the cause of suffering in the strong, are the cause of a proportionably greater suffering in the weak.

If the preceding account of the physical changes produced in muscles from excessive exertion be accepted, it disproves most completely the idea of Dr. Handfield Jones that the pains and other phenomena of myalgia are simply "neurolytic" and dependent on "nerve-debility"; and that of others, which attributes them to hysteria, feminine fancy, or the desire of sympathy. It gives us a good ground for the belief that the sufferings described are *real;* and it unequivocally points to a plan of treatment of which practice has already proved the value; viz., that the muscles should have time to rest, and thus be enabled to repair fractured fibres, and "take up" extravasated blood; it leads us to expect that in cachectic subjects, ecchymosis may pass on to inflammation, and this to abscess or disorganisation; and it still farther points to the necessity there is, in all cases of myalgia, for improving muscular "tone" and increasing vascular tenacity. It demonstrates that, as a general rule, champooing, friction, galvanism, or other means which would aggravate muscular exertion, blisters or other counter-irritants, or leeches or local blood-letting, cannot be expected to do more good than they do in common ecchymosis.

In conclusion, I would only add, that the preceding remarks apply to myalgia of the fleshy portion of the muscles alone, and are not applicable to the pain, etc., which accompanies a prolonged strain upon their fibrous parts.

THE SANGUINARIA CANADENSIS: ITS NATURAL HISTORY, PROPERTIES, AND MEDICAL USES.

By George D. Gibb, M.D., M.A., M.R.C.P, Physician to the St. Pancras Royal Dispensary.

[*Read before the Medical Society of London, January 23rd*, 1860.]

History. The first notice of this plant occurs in Cornuti's *Historia Canadensium Plantarum*, published in Paris in 1635, being therein described as the *Chelidonium maximum Canadense acaulon.* In Parkinson's *Theatrum Botanicum*, published in 1640, an erroneous description of the plant is given, but under the same name as that of Cornuti, and styled the great celandine of Canada. Strange to say, the actual plant itself is very correctly given, with a woodcut, and wrongly named *Ranunculus Virginensis albus*, the white Virginia crowfoot. From Parkinson's writings, my impression is, that the plant was cultivated in England. Morrison, however, settles the point of its early culture in this country when he states, in his work published in 1680, that seeds of the plant had been sent to him from Canada and Virginia, which had propagated abundantly enough near London. Charlevoix, no mean authority in anything pertaining to Canada, has adopted the same name as that given by Cornuti, in his *Histoire de la Nouvelle France;* and moreover styles it the dragon's blood of Canada, "*sang dragon du Canada*". The most correct and accurate account of it, however, is to be found in the *Hortus Elthamentus* of Dillenius, in which several figures of the plant are given, coloured most naturally, under the name of *Sanguinaria major et minor.* Linnæus finally settled the name by adding *Canadensis* to its appellation of *Sanguinaria*, thus embodying its great peculiarity and first known habitation. It is described in many American works on botany, but comparatively in few English. The first introduction of this plant into Europe was through the return to France of some of the earlier travellers in Canada, where the plant was first seen. It was cultivated in the gardens of Paris, and this enabled Cornuti to describe it in 1635; and there can be no doubt whatever that that writer never was in Canada.

I cannot conclude this short account of the early history of the blood-root without reference to an author for whose writings I entertain very great respect. This is a little work by Mons. Pierre Boucher (published at Paris in 1664), who was Governor of Three Rivers, in Canada. He is the *first* author who says anything about many of the plants of Canada, from observation on the spot; and I have no doubt that he refers to the sanguinaria in speaking of "une espèce de lys", at page 86. Charlevoix, however, is the first writer who refers to the use made of the plant; he uses the expression, "C'est souvent servi de la racine de cette plante pour provoquer les mois": in other words, it was employed as an emmenagogue.

Botanical Characters. The plant belongs to the sexual system Polyandria Monogynia, and the natural order Papaveraceæ. Its chief peculiarities are, a little white flower, with usually eight petals; a lobed leaf, veined on the under side with orange; and an abrupt, horizontal, often contorted rhizome, about as thick as the little finger, two to four inches long. It flowers in April and May, as soon as the frost and snow leave the ground. The leaves continue to grow long after inflorescence, and attain to a large size, with numerous lobes.

It has various names, but puccoon is the familar Indian appellation. Dillenius speaks of it a hundred and thirty years ago, under this name, which was derived from the Indians, "*pocan Indigenis dici*". It is also called red root, red puccoon, and Indian paint. Canada is essentially the country of the blood-root; I have seen it growing in various parts of that division of the British Empire. It is found as far eastward as Labrador, and to the north of the Saskatchevan, on the eastern side of the Rocky Mountains. It spreads south, and is found in all the States of the American Union, living in various kinds of soils, derived from various geological formations, and to some extent varying in the delicacy and appearance of its leaves. The root everywhere seems to be the same. It has not been found in a fossil state, although I am strongly impressed with the belief that it flourished anterior to the last deposition of the tertiary strata; but, from the perishable nature of its materials, no relics have been left behind.

The Rhizome: Physical Properties. The only officinal part of this hardy little herbaceous perennial plant is the rhizome or root. When fresh, it is from two to three and a half and four inches long, abrupt at the end, often contorted and truncated, about as thick as the finger, fleshy, round, being for the most part tolerably stout in the middle, with a curvature at each end, covered with orange fibres two or more inches long, of a reddish brown colour externally, inclining to copper, of a brighter blood-red within, and abounding in an orange-coloured juice, which escapes when it is cut. When dried, the root has considerably shrunken, and, as met with in commerce, is in pieces from one to three inches long, flattened, heavy, much wrinkled and twisted. The surface of a fractured portion is at first bright orange. There is but one kind only of the blood-root employed in commerce, and it is met with unadulterated, there being no inducement to practise fraud, from its cheapness and abundant growth. Two packages of the dried root, sent me by my friend Dr. Fenwick, obtained from Lyman, Savage, and Co., druggists, of Montreal, contained eight pounds each, and were put up in oblong deal boxes, with a sliding lid, and were perfectly air-tight.

The odour of the root is peculiar and somewhat narcotic, and, on handling it, causes sneezing. The taste is bitterish, acrid, and durable. The sneezing effect is also produced by stirring the powder. It yields its virtues to water and alcohol, and these are the greatest when the seeds are ripe, in May and July. The powdered root possesses a brighter brownish orange-red colour than powdered cinnamon, and otherwise resembles it. The seeds are the size of grains of barley, dark shiny reddish brown, half surrounded with a peculiar white vermiform appendage. Like most of the seeds of the poppy tribe, the albumen is between fleshy and oily. The juice of the plant, generally of an orange colour, sometimes assumes the tint and redness of blood, especially in the northern parts of Canada. A horizontal section of the fresh root is one of the most beautiful objects in nature under the microscope.

Chemical Characters. All parts of the plant have been submitted to chemical analysis by myself and several other observers; but no regular table of qualitative analysis has been submitted to the profession before that now brought forward by myself on the present occasion. It contains—1. Sanguinarina; 2. Porphyroxin; 3. Puccine; 4. Chelidonic acid; 5. Fecula; 6. Saccharine matter; 7. Vegetable albumen; 8. Orange-coloured resin; 9. Fixed oil; 10. Extractive matter; 11. Lignin; 12. Gum.

The *sanguinarina* was first discovered by Dr. Dana of New York in the root, and is the active principle of the plant; it is an acrid white substance, which forms coloured salts with the acids. I have detected it in the leaves, and have no doubt it is present in the seeds. It is obtained by Dana's, Schiel's, and Probst's different processes, which are to be given elsewhere. Its formula, according to Schiel, is—C^{57}, H^{32}, N^2, O^8.

The sulphate I show was obtained in the preparation of the alkaloid by Schiel's process.

Porphyroxin was extracted from the root by Riegel, and is precisely analogous to the same principle discovered by Merck in opium; and this has induced me to adopt the same name for it in the sanguinaria.

Puccine is a third distinct principle, discovered by Mr. Edward S. Wayne of Cincinnati, in the ether after the precipitation of the sulphate of sanguinarina, in the process of Schiel. As it has not been named, I have ventured to call it puccine, deriving that appellation from the Indian name of the plant. The quantity is so small, that fifteen pounds of the root yielded but 130 grains of it.

Chelidonic Acid has been obtained from the root by Mr. Wayne, who considers the acrid and pungent taste it possesses as due entirely to a salt of sanguinarina, probably the chelidonate. The sanguinarina and puccine would appear to have but little taste.

Fecula I myself detected by precipitation with alcohol from a cooled infusion of the root. After twenty-four hours, the examination of the subsided flocculi with the microscope showed numbers of clear, thin, and transparent starch-granules, mostly circular, with an occasional hilum. A drop or two of iodine gave the characteristic blue colour.

Saccharine Matter I discovered by applying the usual tests for sugar, especially Barreswil's solution.

Vegetable Albumen in small quantity I found in the root, and a large amount in the seeds.

Fixed Oil I obtained in the form of a yellowish liquid, soluble in ether.

Extractive Matter, Lignin, and *Gum*, are also found.

Physiological Effects. I have performed various experiments upon plants and animals, to study its physiological effects; and so has my friend Dr. Fenwick of Montreal. His were chiefly upon dogs and cats. He found large doses to act as an irritant poison, causing frothing at the mouth, vomiting, and purging.

In two dogs, the matter ejected from the stomach, as well as that passed by stool, was mixed with blood. The circulation at first fell, and then rose; there was great thirst, the animal constantly lapping water; the ocular conjunctivæ became suffused, pupils dilated, vision impaired; slight convulsions set in, then coma, stertor, and death in two hours. A drachm of the powder killed a young cat in four hours, with these symptoms. Two drachms were fatal, about the same period, to a full grown cat; and four drachms given to a dog were fatal within two hours. Dissection revealed patches of injection and redness of the mucous membrane of the stomach and bowels, with softening, as this membrane could very readily be peeled off. In its concentrated form, it seems extensively irritating to the mucous membrane generally, whether in man or in animals.

On *man*, in *small doses*, it excites the stomach, accelerates the circulation, and acts as an agreeable cerebral excitant; it stimulates the secretions, especially those of the entire bronchial mucous membrane, and also, as has been asserted, those of the liver. If *more largely given*, it produces nausea; and if its action is kept up continuously, or repeated at intervals, it lessens the frequency of the pulse in a manner somewhat analogous to the operation of digitalis. In a *full dose*, it occasions vomiting. This is from ten to twenty grains, and is its most striking effect, accompanied with a sense of heat, or sometimes a burning sensation in the fauces. An *excessive quantity* or an *over-dose* of the root acts as a poison, and produces violent vomiting, a burning sensation of the stomach, tormenting thirst, faintness, vertigo, indistinct vision, and alarming prostration of strength. The vomiting may not be immediate, and nausea may continue for some time, until it does ensue. It irritates the fauces, leaving an impression in the throat for a considerable time after it is swallowed. In July 1841, four persons lost their lives at the Bellevue Hospital, New York. They were employed in whitewashing the apothecary's shop; and each of them drank out of a demijohn left there a large quantity of the tincture of blood-root, which they mistook for intoxicating liquor. They were all soon seized with racking and burning pains, and a tormenting thirst; and all died during the ensuing day. The effects, therefore, of an overdose are those of a violent acrid narcotic; and, although no mention is made of any *post mortem* examination, it may reasonably be assumed that violent inflammation had ensued of the stomach and bowels. I might add much more in the way of experiment, and the influence of the seeds and the leaves on the economy; but sufficient has been stated to give a clear idea of the physiological effects of the plant.

Therapeutic Action. In relation to its action, sanguinaria possesses emetic, nauseant, expectorant, diaphoretic, narcotic, sedative, stimulant, and alterative properties. It acts, also, as an emmenagogue, escharotic, and errhine. Occasionally, it exerts a diuretic, purgative, anthelmintic, and antipsoraic effect. It is said to be prophylactic. All these are regulated by the dose and form in which it is administered; it is, however, chiefly valuable for its emetic and expectorant powers, and its action as an emmenagogue.

1. As an emetic, nauseant, and expectorant, it is highly valuable in various chest and throat affections, and has been employed in pneumonia, phthisis, bronchitis, catarrh, asthma, croup, diphtheria, cynanche maligna, and pertussis. It is less used as an emetic than as a nauseant, expectorant, and alteratine. It is not followed by the depression of other emetics, but rather supports and stimulates. In this way, it is valuable in croup, being pronounced a specific by some writers. In the croupal and malignant forms of diphtheria it will be found not less serviceable. In Germany and other parts of the Continent it is used as an emetic. Its expectorant and stimulant properties are easily exerted. It should not be used during high febrile excitement, nor acute inflammatory affections, until after depletion. It forms the chief ingredient of Ayer's cherry pectoral, combined with antimony, ipecacuan, morphia, and syrup of cherry-tree bark.

2. As a diaphoretic, narcotic, sedative, stimulant, and alterative, it is employed in scarlatina, rheumatism, jaundice, dyspepsia, hydrothorax, and some other affections. These effects are produced by small and repeated doses. As a gargle it is employed in scarlatina. Combined with opium, it is said to be one of the best and safest diaphoretics. Its narcotic action follows the primary stimulation of the heart's action. As an anodyne *per se* it is not worthy of trial, but its sedative effect upon the heart is very certain, after its first excitement disappears; the pulse then gradually decreases in frequency. Two to four grains of the powder, every hour, will produce a sedative action.

3. As an emmenagogue, it deserves some consideration, and has long been known to exert its virtues in this way. I have proved its value by experience, and have found that when it is taken freely, it has produced, in some instances, menorrhagia; in others, again, it has cured leucorrhœa. The North American Indians believe in its occasioning nymphomania, and their love powders are composed of sanguinaria. I am satisfied that it does exert some influence on the uterine system, and it will prove emmenagogue when other substances fail to do so. In the report of the Surgical Staff of the Middlesex Hospital, published in 1857, is the following quotation:—"It is evidently a powerful remedy, and as an emmenagogue is, perhaps, equal to any drug now employed in England."

4. As an escharotic, it irritates the surface of ulcers, promotes absorption of exuberant granulations, and changes action; it also exerts an effect on diseases of the skin. It cleanses wounds or ill-conditioned ulcers by its stimulant properties. As for its asserted value in promoting the disappearance of tumours and the cure of cancers, there is not the slightest evidence to favour such a view, and American surgeons were astonished when it was propounded, as experience in their hands had proved it to be utterly useless in that respect. This is stated on the authority of most of the respectable medical journals in the United States and in Canada. Moreover, the assertion that it was in use among the Indians on the shores of Lake Superior, as a remedy to cure cancer, is utterly gratuitous and assumptive. It has never been employed for such a purpose by them, and this is stated, in the most positive manner, on the best authority, and without the least fear of contradiction. The profession in this country have formed a correct estimate of its value in cancer; it is perfectly inert in that disease.

5. As an errhine, it has been used in coryza, and in cases of polypus of the nose.

6. As a diuretic and purgative, there is very little evidence to prove it to be either. Dr. Fernwick, of Montreal, and some others, have asserted that the squaws employ it as as anthelmintic. And, as a prophylactic, it is used against the invasion of intermittent fevers.

[*To be continued.*]

Preservation of Leeches. Hospitals and vendors have endeavoured to derive advantage from leeches by making them serve several times, and especially by preserving them, by conveying them without danger, etc. Numerous apparatuses have been invented with this view, but M. de Quatrefages has espetially brought under the notice of the Academy of Sciences, that of M. Vayson, an eminent breeder commissioned by the administration to study the breeding of leeches in Algeria. This apparatus, which its author denominates a *domestic marsh*, consists simply of an earthenware vessel in the form of a truncated cone reversed, the lower extremity of which is pierced with a few holes, sufficiently narrow not to allow the leech to pass through. This vessel is filled with turfy earth; the leeches are placed in it, and they soon install themselves as well as they can; then the orifice of the vessel is closed with a coarse cloth. If they have to be forwarded to a great distance the earth is wetted in all its thickness and the vessel is packed in a case, or merely a basket. If the leeches have to be preserved on the same spot, the lower end of the vessel is placed in a tub, the water of which rises to about the height of four inches, and no further care is required. By the process of infiltration the lower strata of the little marsh are soon wet through, the upper strata remaining almost dry. Between these two extremes the leeches know perfectly well how to choose the zone most appropriate for them, and deep galleries in which they live as it were *en famille*. The leeches transported from the Bordelais to Algeria, those brought from Algiers to Paris, had been shut up in these domestic marshes. The former occupied to the number of nine hundred, two of these apparatuses. Not one had died on the way up to the arrival at Algiers. The others, to the number of a thousand, were, on their arrival, in the most satisfactory state. But it is not merely as a means of conveyance that these apparatuses have been proved to be useful; they are not less so as reservoirs intended for the preservation of leeches. In several Parisian hospital, leeches that have been already used are employed again; but, after being used five times consecutively, they die off in the space of a few weeks. But these same leeches that had been exhausted, when placed in M. Vayson's apparatus, have been tolerably well preserved, and at the end of two months a third of them was left. (*Journal de Médecine et de Chirurgie pratiques.*)

British Medical Journal.

SATURDAY, FEBRUARY 4th, 1860.

POOR-LAW MEDICAL REFORM.

We trust that the long and weary period, during which our associate Mr. Richard Griffin has laboured so indefatigably, with but little encouragement, in the cause of Poor-law Medical Reform, is about to come to an end. Mr. Pigott has given notice in the House of Commons of his intention to bring in a Bill on an early day on this subject; and we have hopes that something is really about to be done to improve the position of the very large and deserving class of the profession to which the enactments of the Bill will apply.

The leading features of Mr. Griffin's scheme, which we presume will form at least the foundation of Mr. Pigott's Bill, will be found in the extracts we give at p. 96 from the former gentleman's pamphlet, which has been forwarded, we understand, to every Poor-law medical officer in the country.

As the chief grievance of the "Union Doctor" is undoubtedly the very inadequate pay he receives for very arduous duties, the proposed reforms on this head will attract much attention. Instead of the present salary, arbitrarily fixed by the guardians, Mr. Griffin proposes that the Poor-law medical officer shall derive his salary from three sources: first, one penny *per annum* on each acre in his district; secondly, one shilling and sixpence per head on the average number of persons in the receipt of relief in the district in the first weeks of January and July in each year, the average being derived from the three preceding years; and thirdly, a charge of two shillings and sixpence for each patient attended by the medical officer on an average of each year during the last three years: this is to be when the medical officer finds the medicine; when, as is provided in another clause, this is supplied by the guardians or Poor-law Board, the payment per patient is to be one shilling and sixpence.

In order that it may be seen at a glance how much the position of the union surgeon would be bettered by Mr. Griffin's scheme, we append a table shewing the various divisions of England and Wales; with (A) the total salaries, calculated according to a scheme proposed by Mr. Sotheron-Estcourt, of 1*s.* 6*d.* on each of the pauper population, and 1*s.* 6*d.* for each case of illness, together with one penny per acre; (B) the total salaries, calculated according to clause xvi of Mr. Griffin's Draft Bill; and (C) the present amount of salaries of the medical officers in the respective divisions.

	A.	B.	C.
1. The Metropolis ..	19,240	29,244	10,864
2. South-Eastern	32,235	39,417	23,309
3. South-Midland....	27,043	32,800	18,302
4. Eastern.....	26,118	31,006	15,769
5. South-Western ..	39,076	46,469	21,224
6. West-Midland	29,673	35,365	17,319
7. North-Midland ..	24,793	27,536	9,799
8. North-Western ..	20,731	24,965	12,298
9. York	21,480	23,591	8,869
10. Northern	18,396	20,690	4,754
11. Welsh	28,879	31,312	8,428
Loss in Division ..			6
Total	£287,664	£342,395	£150,941

If the House of Commons will sanction this proposal, the salaries of the Poor-law medical officers will be more than doubled; the new scheme yielding a total of £342,395, against the £150,941 at present paid. It must be remembered, that this calculation is quite irrespective of extras—a scale for which, it is proposed, shall be left to the determination of the Poor-law Board, with the advice of the General Council of Medical Education and Registration.

If Mr. Griffin only manages to carry this part of his scheme, he will have earned for himself the gratitude of every medical officer in the kingdom; and there is no gratitude so warm as that springing from the unexpected doubling of one's means. But Mr. Griffin not only proposes an increase in the salary, but he stipulates that many things at present in dispute between the union doctor and the guardians, shall be paid for by the latter. Among these articles are enumerated cod-liver oil, leeches, bread, linseed-meal, and other requisites for poultices, together with cotton-wool and calico, and certain drugs and appliances, to be fixed upon by the Poor-law Board, with the advice of the General Council. It is high time that these little details, of such importance to the sick poor, should be settled; as at present they form the subject of most unseemly squabbles between the guardians and the medical officers, in which either the union doctor or his poor patient is in the majority of cases the sufferer.

It is but fair, however, that a medical man who has to visit the sick extending over miles of country should be exempt both from the tolls of the district in which he is acting, whilst on duty; and from the taxes on one horse, carriage, and man servant, the only means by which he can accomplish his distances. It certainly is monstrous that an agricultural vehicle should escape taxes and tolls, whilst the union doctor's should pay both whilst employed on his errand of mercy.

We feel certain, however, that no part of Mr. Griffin's scheme will be received with greater favour among Poor-law medical officers than that which provides for the appointment of an additional Poor-law Commissioner or Secretary, possessed of both a surgical and a medical diploma, and who shall have been an union medical officer of not less than three years standing. It is proposed that this officer should be appointed or elected by the medical officers themselves, and that he should conduct the medical correspondence of the Board. There can be no doubt that the appointment of such an officer, conversant with the details of an union doctor's every day work, aware of the difficulties with which he has to contend, and having, like his brethren, suffered persecution, and, we trust, therefore learned mercy,—would materially tend to make the wheels of this department of government work more smoothly and equably than they do at present.

Possibly Mr. Griffin's proposal that no medical officer shall be elected to any district or workhouse, who is the paid assistant of another medical man, and who is not practising *bonâ fide* on his own account, may be objected to in some quarters. We think, however, that this is but a fair provision against the abuse of performing the work by deputy that at present too often obtains.

Another very important provision of Mr. Griffin's scheme is that which provides against the evils of too extended districts, and too large a number of patients:—

"The guardians shall not assign to any medical officer hereafter to be elected a district which extends beyond six miles from his residence, or if at the time of his appointment this distance has been exceeded, the appointment to that part of the district beyond the six miles shall only be continued as a yearly office, and so long only as it may be found impracticable to obtain the services of a qualified medical man living within the prescribed distance. Whenever any medical officer shall have had more than one thousand five hundred patients on his list in any one year, excepting in the case of an epidemic, it shall be the duty of the guardians to reduce the size of the district, or to appoint an additional medical officer thereto."

It will be observed also that Mr. Griffin embraces in his scheme provisions for the more efficient performance of public vaccination, as well as for conferring the duties of officers of health on Poor-law medical officers.

If Mr. Pigott can only find time during the present session to get these proposed amendments in the law fairly discussed, we believe that the majority of them will pass. There is nothing in them which can in justice be refused; and we see no reason to suppose that any "interest" will be inclined to throw obstacles in the way of their adoption. We believe that the Poor-law Board are heartily tired of doing battle with Mr. Griffin, who, like the British soldier, never knows when he is beaten; and that they would be glad to see some settlement of the question which would give them peace.

But we must remind those who are principally interested in these reforms, that they must put their shoulders to the wheel, if they wish to see the scheme become an accomplished fact. Disheartened and discouraged by past failures, but too many of them, we fear, are inclined to leave the battle to Mr. Griffin, despairing of success. But these gentlemen should take heart from a recollection of the progress of the greater question of medical reform. When all the world almost, with the exception of this Association, despaired of anything being done, the thing suddenly *was* done. Let the medical officers of every union petition again and again as we did; let every member of Parliament that can be laid hold of be indoctrinated with the justice of their demands; and some fine afternoon, when possibly the *Medical Times and Gazette* has again assumed the office of prophet, and announced the entire failure of the scheme, we shall find that a new Poor-law Act has passed successfully through its stages. Mr. Griffin has done his duty nobly: we call upon the Poor-law medical officers to do theirs.

THE WEEK.

OUR obituary of this week adds another name to the list of those eminent men of the medical profession, who have of late been removed from among us. Dr. Robert Bentley Todd died on Monday last, at, we believe, a comparatively early age. We have learned that, while on a visit at Gloucester, two or three days before his death, he was seized with hæmatemesis, and vomited three pints of blood. Instead of taking that rest which such an alarming incident would seem to indicate, he hastened to London. On his arrival, a further loss of blood took place: notwithstanding which, he continued to visit his patients. A final attack set in, which ended in fatal syncope at 4 P.M. on Monday. At the *post mortem* examination, there was found to be enlargement both of the liver and of the kidneys. At the time of his death, Dr. Todd was in the enjoyment of one of the largest physician's practices in the metropolis.

We learn from the Indian news that the following reprimand has been published by Lord Clyde, the Commander-in-Chief:—

"Adjutant-General's Office, Her Majesty's British Forces, Calcutta, 21st December. Head-Quarters, Camp Saidabad, 10th December.

"On the occasion of a recent inspection conducted by the Commander-in-Chief in person, Lord Clyde made the painful discovery, at two stations where three of Her Majesty's regiments are quartered, that the hospitals had been devoid of quinine for several months. Lord Clyde is obliged to reiterate, what every commanding officer must be aware of, that the principal medical officer of a regiment is not the commanding officer. He is as much responsible that his hospital is duly supplied with medicines as that his men receive their daily pay. If the regimental doctor has reason to complain of the superintending surgeon, and cannot get what he wants, the commanding officer should address the general officer commanding the division. If that is of no avail he should write to the Adjutant-General of Her Majesty's Forces. If that resource fail him, it is his bounden duty to address the Commander-in-Chief in person. In the same manner, in common justice to the regiment he commands, he should never rest till he has obtained the best accommodation, furniture, shelter, etc., which the circumstances under which he is placed may permit. It does not belong to his situation patiently to endure what appears to be ignorance, sloth, or carelessness in the functionaries who are bound to provide his regiment, according to their various vocations, whether it be the commissariat, barrack department, the executive engineer, the civil authorities, or the superintending surgeon; it is incumbent on him, as being intrusted with a great and trying responsibility, to report to superior authority when he considers his regiment wronged or neglected, or that it is suffering from causes which it may be in the power of the Commander-in-Chief to remove.

"By Order of his Excellency the Commander-in-Chief.

"W. L. PAKENHAM, *Colonel*,

"*Adjutant-General Her Majesty's Forces in India.*"

Can any of our correspondents in the Eastern empire inform us to what extent a foundation for this severe animadversion on members of the medical profession exists? and with whom the blame—for which there is evidently cause—really lies?

In the JOURNAL for January 21, we stated that the discovery of a new planet by a French country practitioner had been announced to the Academy of Sciences by M. Leverrier. We have now to record, in reference to this case, another instance of the readiness with which our neighbours across the Channel recognise and encourage scientific merit, by whomsoever manifested. On the recommendation of the Minister of Public Instruction, M. Lescarbault, the discoverer of the planet, has been nominated a knight of the imperial order of the Legion of Honour. The French certainly set us a good example in the manner in which they treat their scientific men. From the difference of national tastes, an Englishman might think less of such an honour than a Frenchman; but still there are few who, having made some important discovery in science, would not regard a mark of recognition from the State as (to use the words of the French Minister of Public Instruction) "a renewed encouragement."

Association Intelligence.

BRANCH MEETINGS TO BE HELD.

NAME OF BRANCH.	PLACE OF MEETING.	DATE.
Birmingham and Midland Counties. [Ordinary Meeting.]	Hen and Chickens Hotel, Birmingham.	Thursday, Feb. 9th, 6 P.M.

METROPOLITAN COUNTIES BRANCH: SPECIAL GENERAL MEETING.

A special general meeting of the Metropolitan Counties Branch was held in the rooms of the Medical Society of London, George Street, Hanover Square, on Tuesday last, at 8 P.M.; E. W. Murphy, M.D., President, in the Chair.

The Journal. Dr. Stewart brought forward the following resolutions, of which he had given notice.—

"1. That the British Medical Association, having for its objects 'the promotion of medical science and the maintenance of the honour and interests of the medical profession', cannot efficiently fulfil its mission without a weekly representative organ of its own.

"2. That it is not only the duty but the interest of the Association, to maintain a Journal having a high professional position and scientific character.

"3. That this Branch would earnestly urge on the attention of the Council and Committee of Council of the Association, the propriety of devising and adopting such measures as shall place the British Medical Journal in that commanding professional and scientific position which should distinguish the representative of so important a body."

Dr. Stewart urged that the subject of the Journal was of vital importance and general interest to the Association. It had been discussed at the Liverpool meeting, and also subsequently. He regretted, however, that the discussion had lately taken the form of a dispute on pounds, shillings, and pence. These were doubtless very important; but to judge the Journal by the money question only, would be a great injustice. He had therefore determined to bring the subject of the Journal before the Branch, that it might be discussed on its true basis. Some, both within and without the Association, had represented it as an act of folly for the Association to maintain a Journal, which could never compete with other periodical publications. He dissented entirely from this opinion. So far from the publication of a Journal being no business of the Association, it was the most effective possible plan for carrying out its objects. Without a Journal, the Association would be shorn of its strength; and, considering the great power of the press, it was not to be expected that the Association could fulfil its mission in any other way than through this power, and by having an independent representative organ of its own. It was for the interest of the Association then, to have a Journal—and he would say *a weekly* Journal. A fortnightly publication was neither "fish, flesh, nor good red-herring." A periodical published less often would be better; but there was no doubt whatever that a *weekly* publication is the thing absolutely required. Besides, the relative effects of a weekly and a fortnightly publication on the numbers of the members had been conclusively shewn in the Journal. He then went on to urge that a due expenditure of money was necessary in order to maintain the Journal in a high professional and scientific position. It would be well for the Association to set the example of paying medical writers, perhaps not largely, but fairly, for their contributions. By a judicious expenditure, a staff might be secured, who would materially aid the editor, and introduce variety into the Journal. With regard to the method of obtaining funds, he expressed his opinion that if those who did not contribute to the call-fund in 1856 would now pay, many of the former contributors would be ready to come forward with an additional voluntary subscription, the proceeds of which might be applied as a Journal fund. It was important that the matter should be urged on the attention of the Council and Committee of Council. He believed that it would occupy much of the attention of the Association; and he hoped that the result would be to make the Journal *the* medical journal of the kingdom. If men could be tempted to write, the Journal would be the best, and hundreds of members would probably soon be added to the Association.

A discussion followed, which was shared in by Drs. Routh, Richardson, Camps, Wynter, and Joseph Seaton.

At 10 o'clock, the meeting was, on the motion of Dr. Routh, seconded by Dr. Seaton, adjourned to Friday, Feb. 24th.

On the motion of Dr. Stewart, seconded by Dr. Lankester, a vote of thanks was given to the Council of the Medical Society for the loan of the rooms.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, January 30th, 1860.

John Hilton, Esq., F.R.S., President, in the Chair.

THE STUDY OF DISEASE BY SYNTHESIS.

BY B. W. RICHARDSON, M.D.

The first part of the paper was devoted to a description of the mode in which synthesis might be applied in medicine, together with the history of the manner in which it had already proved useful, although directed by no systematic line of research. The author then indicated a systematic course for such inquiry, and divided diseases for this object into six great classes: viz., the parasitic diseases; the zymotics; diseases having their origin in the nervous system; diseases where, from disordered chemistry, a new growth is evolved out of the materials of the body, *i.e.*, malignant diseases; diseases of simple degeneration or of misplacement of natural constituents of the organism; and inflammation. He pointed out carefully the animals which might be properly subjected to synthetical experiment, *i.e.*, to the induction of disease; and he then narrated the results of his own experiments in the production of endocarditis by the introduction of lactic acid into, and its generation in, the system.

The following were the three inductions with which Dr. Richardson concluded his paper.

1. The results of his experiments taught, as fully as experiment could teach, that the hypothesis of Dr. Prout as to the cause of rheumatic inflammation, was essentially correct. In course of time, Dr. Richardson thought, some modification of view may probably be offered as to the nature of lactic acid and its relationship to the economy. But the broad fact of the origin of the local disease under the influence of an acid poison will remain as ever. If the question should be asked, Why, on the supposition of such a cause for a specific disease, the so called predisposing and exciting causes play so important a part? Dr. Richardson's reply would be, that the results obtained give an insight into the meaning of these terms, *predisposing* and *exciting*, which they never had before. A man may absolutely live on a diet which is predisposing to the disorder. He may have an error in digestion which shall predispose him to the disorder. But such a man may live on, and may suffer no acute mischief, so long as his excretory functions are perfect; so long as he can burn off the poison in the respiratory changes, or eliminate it in fluid excretions. The excretions of this man being checked, however, in the skin, in the lungs, in the kidneys, and therewith more or less in all these organs, the poison accumulates, floats round with the arterial blood, and wherever it finds a favouring point, excites the local change—*inflammation*.

2. The results related by Dr. Richardson were, he said, of interest as indicating new lines of inquiry for every other form of local inflammatory change. It may be that every local inflammation we know of as due to internal causes is the result of an agent similar in character to the one used by him; an agent not absolutely foreign to the body and not hurtful to the body when present in the normal proportions, (for lactic acid is innocent enough as a natural constituent of muscle,) but poisonous truly, when accumulating, it pervades tissues to which it is foreign. It would be fair science indeed, with so distinct a suggestion before us as to take an empirical survey of the action of all the organic acids of the economy; but it would be most direct as a primary step to ascertain the nature of the various products eliminated in locally inflamed parts, and to test the effects of such products in quantity, on the economy. For an example, in the fluid matter excreted under the epidermis in erysipelas, what is there present? The fluid has an acid reaction and excoriates the parts over which it flows. Dr. Richardson

added, that, when he had learned the nature of the active principle here, he might expect to induce erysipelas as he had induced endocarditis.

3. The last point to which he referred touched on the question of the general or local origin of inflammation. He remarked that the common sayings, that inflammation "is a blood-disease," that it arises "from a perserted nutrition," and the like, while they are terms expressing a kind of unsophisticated truth, are far too vague to become established arguments, and sink into doubt altogether before the reasonings, partly brilliantly correct and partly brilliantly absurd, of the ingenious Virchow and his local origins. He hoped the observations he had been enabled to make had come in at the right time, to explain what is general and what is local in an inflammatory act. He would put the position in the simplest terms at his command. Granting that a surface of skin or mucous membrane is uninfluenced by any extrinsic or intrinsic agent—the truism must be premised, childish as it is—the part does not inflame. Bring externally to that part a foreign substance, acetic acid, formic acid, mustard, a blister, hot water, and the part undergoes changes which are *purely local*. The general condition of the blood is natural; and this natural blood supplies all the elements of a local disease, even to suppuration itself, if the locally applied poison is applied efficiently. But change the mode of application, and assume that, as in the experiments made by the author, the producing agent is produced in the economy instead of the crucible, and is carried to the local part by the blood instead of the brush or the plaister. In the local upshot there will and can be no difference in the two cases; for the poison externally applied only acts powerfully in proportion as it is absorbed, and the poison brought by the blood only acts powerfully in proportion as it is circulated in the part. In both cases, therefore, veritable local changes will be produced in the affected part; the blood will not directly supply the exudation; the blood will not directly supply the pus if that fluid is formed; but both plastic matter, serum, pus, or aught else in way of product, will be local results in the strictest sense. There was, nevertheless, one general symptom which distinguishes the inflammation of internal from that of external origin; viz., the systemic disturbance. The circulatory fluid cannot be changed with an agent, nor can organic chemistry produce an agent capable of exciting local changes, such as have been depicted, without a forerunning expression in the way of rigor or increased heat, that there is such a malchemistry at work, and that the electrical equilibrium of the body is disturbed. This systemic indication may indeed in the end become secondary to the local mischief in importance; it may be primary, it may kill while the local change is insignificant. This difference as to general results remembered, the local upshot in the two stated examples is essentially the same.

Mr. Lee said that Dr. Richardson had represented the synthetic system as having been adopted only in late years; but he believed Hunter's mode of investigation to have been synthetic. He thought, too, that the researches of Ricord in relation to syphilis should have been referred to.

Mr. Durham had tried two or three experiments on dogs with lactic acid. In one case, he injected a drachm of concentrated acid, in an ounce and a half of water, into the jugular vein of a dog; some general symptoms were manifested for a time, but he could find no symptoms nor *post mortem* signs of disease in the joints nor in the heart. He repeated the experiment a second time, without result; but the dog died from over-eating, in three days after the injection. Dogs were subject to heart-disease. In two instances, he had found inflammation of the endocardium; in one, there was pericarditis. He agreed with Dr. Richardson that it was impossible to trace all the organic changes taking place in the body, especially in disease.

Dr. Routh said that the experiments of Mr. Durham were nugatory, inasmuch as he had injected the acid into the veins, while Dr. Richardson had thrown it into the peritoneum.

Dr. Richardson said that he had failed in producing any symptoms by injection into the veins, because the lactic acid is here rapidly eliminated.

Dr. Druitt thought that Dr. Richardson had not quite done justice to those who had followed the synthetical method of observation. In regard to the syphilitic poison, there had been observers besides Hunter and Ricord who deserve mention. But if we are ever to arrive at a correct knowledge of the causes of disease, it will be by the synthetic method. He referred to the production of hospital gangrene, puerperal fever, *charbon*, etc.; these were synthetic; and a series of experiments legitimately carried on, on a similar principle, would be of great service.

Dr. Hare expressed the difficulty of discussing the subject, however ably brought forward. However, he thought it was not so easy to define the analytical and synthetical processes. Dr. Richardson had said that Jenner had followed synthetical reasoning in the employment of vaccination; this was correct; but the first part of Jenner's reasoning was analytical. He believed that our observations must be analysed from facts brought before us; and then synthesis comes in as confirmatory.

Mr. De Méric would dispute various analogies drawn by the author of the paper; *i. e.*, zymotic diseases, the injection of lactic acid, and division of the spinal cord producing epilepsy. There is no analogy in these. If lactic acid is injected, a principle is thrown in which, in superabundance, produces rheumatism. But the production of rheumatism by the injection of lactic acid had no analogy with the production of epilepsy by division of the spinal cord, nor with the production of zymotic diseases. Suppose hospital gangrene produced by miasmata. The synthetic experiment would be to induce it by introducing the secretions into a healthy subject. He acknowledged the probable value of synthesis; but, to apply it, there must be defined classes of disease to which it may be applicable.

Editor's Letter Box.

THE LICENSE OF THE EDINBURGH COLLEGE OF PHYSICIANS.

Sir,—In a few editorial remarks you make on a letter headed "The License of the Royal College of Physicians, Edinburgh," you say, "A person who has thus become a licentiate of the Edinburgh College is entitled to the title of physician, the term being understood in its simple meaning, and not conveying with it, as a logical sequence, the idea of connection with the Royal College of Physicians of London." If, sir, the following clause (47) of the Medical Act means anything, it is that members or licentiates of Edinburgh must be admitted, on payment of two pounds, members of the London College. The words are:—

"xlvii. It shall be lawful for her Majesty to grant to the Corporation of the Royal College of Physicians of London a new charter, and thereby to give to such corporation the name of 'The Royal College of Physicians of England,' and to make such alterations in the constitution of the same corporation as to her Majesty may seem expedient; and it shall be lawful for the said corporation to accept such charter under their common seal, and such acceptance shall operate as a surrender of all charters heretofore granted to the said corporation, except the charter granted by King Henry the Eighth, and shall also operate as a surrender of such charter and of any rights, powers, or privileges conferred by or enjoyed under an Act of the Session holden in the fourteenth and fifteenth years of King Henry the Eighth, chapter five, confirming the same as far as such charter and Act respectively may be inconsistent with such new charter: provided, nevertheleas, that within twelve months after the granting of such charter to the College of Physicians of London, any fellow, member, or licentiate of the Royal College of Physicians of Edinburgh, or of the Queen's College of Physicians of Ireland, who may be in practice as a physician in any part of the United Kingdom called England, and who may be desirous of becoming a member of such College of Physicians of England, shall be at liberty to do so, and entitled to receive the diploma of the said college, and to be admitted to all the rights and privileges thereunto appertaining, on the payment of a registration fee of two pounds to the said college."

It is pretty plain that after the new charters are granted, all Edinburgh members may become London ones, on paying the above sum. This is to be regretted, as some of the Edinburgh men practise pharmacy, and at least one name, in the published list, is that of the son of a well-known London advertising doctor. I am, etc.,

M.D. and M.R.C.P.Lond.

Liverpool, January 30, 1860.

PUBLIC VACCINATION.

Letter from C. P. Collyns, Esq.

Sir,—I have read with satisfaction the letters which have of late appeared in the *Times* newspaper, in the Journal, and in several other medical publications, on the subject of vaccination. I am of opinion that the subject is of as much importance as any now under discussion by the public, not excepting the volunteer movement. I therefore beg to give you the little experience I may have had as a practitioner of forty-five years standing, in the hope that some benefit may arise from it.

I served my apprenticeship at the Devon and Exeter Hospital, an institution second to none in the provinces, and equalled but by few in the United Kingdom, as far as accommodation for one hundred and fifty beds goes. Twice a week, vaccination was performed gratuitously; and the children were brought to be inspected four times during the progress of the disease, that any irregularities might be noticed; and we were instructed to be very particular as to the appearance of the vesicle on the eighth, eleventh, and fourteenth days; to note any constitutional symptoms, the double areola, and the colour and appearance of the incrustation formed from the pustules, without which, in those good old fashioned days, we did not consider the patient proof against small-pox.

I mention this to show the absurdity of the present law, which, in my opinion, is a disgrace to the legislature; and the sooner it be repealed, and an Act that will further the views of the ever memorable Jenner instead of bringing his discovery into disrepute, be passed in its stead, the better. Such an Act must be full and comprehensive, if we are ever to have small-pox eradicated from our land. At present, a penalty attaches to all who do not have their children vaccinated before three months old; but no authority is provided to see that the law be carried out. I know several families who will not allow their children to be vaccinated; and the odium of an informer prevents the enforcement of the Act of 16th and 17th Victoria.

The remuneration to the public vaccinator is another cause of evil. One shilling and sixpence and half a crown are the current fee, according to distance, given to the vaccinator for each successful case; and he is required to see the patient but *once* after performing the operation, viz., the eighth day; on which occasion, if the arm be infected, to give a certificate of successful vaccination. A more absurd declaration, in my humble opinion, does not exist, and tends to show the loose way in which Acts of Parliament are passed by the legislature, who are in duty bound to have the best evidence that can be obtained in all cases with which the members are not supposed to be cognisant. I will defy any practitioner, let his skill be as great as that of Jenner, to be certain that the disease will pass on to its full accomplishment by *only seeing it on the eighth day*.

A few years after commencing my practice, small-pox broke out in my neighbourhood, and I was called on to inoculate over one thousand, old and young; amongst them, about one hundred and thirty had been previously vaccinated by nine different practitioners, at periods from eleven to one year; out of these, six or eight had small-pox in a modified degree, two of them being patients of my own. I was annoyed at this; and, on looking over my memoranda (for at that time I kept a regular account of observation of all patients vaccinated by me), I found the remark, "*Pustules disturbed on the ninth day*," opposite their names. I inferred from this that sufficient lymph had not been taken up and carried into the constitution, so as to cause it to be proof against small-pox. Now, if I am right in this, how can a vaccinator of the present day certify the case to be successful on the eighth, and *never see the case after?* On that very day after the child's visit, or on the next, the pustules may be disturbed, and the disease prevented running its accustomed course.

I believe it to be generally admitted that a new Vaccination Act must take place; in short, without it we shall be in a worse position than at the time I allude to above; for, should small-pox now break out, I believe that one-third of those vaccinated since the Act of 16 and 17 Victoria came into operation will be found incapable of resisting its ravages. It is my opinion that the legislature should enact that the vaccinator should make two punctures in each arm; see the patient four times during the disease; and keep a book to note the different stages and final result, and not give a certificate of successful vaccination until the last visit, and not then unless two punctures succeed. To do this, they must be properly remunerated. Two shillings and sixpence should be the minimum fee for each case brought to the surgeon's house; three shillings and sixpence, if he visit a patient a mile distant; if three miles, five shillings; over three and under eight miles, seven shillings and sixpence; above eight and under ten miles, half a guinea; and for every mile above ten miles, one shilling. With proper remuneration, medical men would not pass cases as successful without taking every precaution; but, as the present Act enforces a certificate for successful vaccination on seeing the child on the eighth day, if but one puncture rises, they certify to obtain the paltry fee. District inspectors of vaccination stations should be appointed, who should examine the books, and obtain from the registrar of births the names of all registered during the quarter, and lay an information against the parents of all who have not taken their children to the vaccinator.

I observed, a few days since, that the Privy Council are at last taking steps in the right direction, as far as instructions to vaccinators go; but, without increasing their pay to a remunerating point, and establishing an inspector for every two or three counties, with powers to enforce the Act by information against offending parties, no good will be done.

I am, etc., C. P. Collyns.

Dulverton, January 25th, 1860.

VACCINATION.

Sir,—I have waited for some one to notice the letter in the Journal of the 14th ult., where the ill effect of the working of the present Act is brought forward by another grieved practitioner. I think, if all were to speak of their grievances, Mr. Terry, jun., would find that the parish vaccinators are not *all* so honourable as we could wish.

I believe the remedy to all this would be the following:—First, get some good matter; secondly, let the registrar give a certificate to the parent of the child to have it vaccinated by a registered medical man. If the vaccination be successful, let him give a certificate to that effect; and keep as many as he may get from the parents of children till the end of the quarter, when they should be sent to the Board of Guardians, to be paid.

I am, etc.,

L.R.C.P.Ed., M.R.C.S.Eng., L.M.Lond.

February 1860.

POOR-LAW MEDICAL REFORM.

Letter from R. Griffin, Esq.

Sir,—In the pamphlet addressed by me to the members of the legislature, a copy of which I have sent to each Poor-law medical officer, reference is made at page 6 to three poor widows and their large families; but, by some unaccountable mistake, the case of one, Mrs. Gall, was omitted. Her husband "was in practice at Ripley, Surrey, seventeen years; and, after two days illness, died of diphtheria, occasioned by his attendance on the poor of his district, leaving her and six children unprovided for". The widow now seeks the assistance of the governors of the Roya! Medical Benevolent College for her son, aged 11, which, I am sure, will be cheerfully given to him, in common with the other cases I have mentioned. Permit me to call the attention of the governors of that excellent institution to the case of Mrs. Milsom (mentioned in the pamphlet), which, I trust, will be the means of stopping that expensive system of canvassing for votes which seriously cripples the resources of the already impoverished applicants. It would be an act of real kindness if a law were to be passed that canvassing for votes by printed letters or cards should be a disqualification. Mr. Milsom says, in her second letter to me, "I cannot stand the expense of the application for either of my other boys; the expense I have already incurred regarding the dear little fellow departed has sorely shrunk my little store, and in the future I dread to think of what will become of me and my children." Surely something may yet be done for her and her family.

Mr. Pigott has written to me, stating that, on Thursday, January 26th, he gave notice in the House of Commons, "that on an early day he would ask leave to bring in a Bill on the subject of Poor-law medical relief, with a view to improve the position of the medical officers, and to secure more efficient relief to the poorer classes."

I sincerely trust the Poor-law medical officers will immediately petition the House of Commons, and also beg their members to support Mr. Pigott.

Should any Poor-law medical officer not have received a copy

of the pamphlet, I shall be happy to forward him one on application. I am, etc., RICHARD GRIFFIN.

12, Royal Terrace, Weymouth, January 28th, 1860.

Parliamentary Intelligence.

HOUSE OF COMMONS.—Thursday, January 26th, 1860.

POOR LAW. Mr. PIGOTT gave notice that on an early day he would ask leave to bring in a Bill on the subject of Poor-Law Medical Relief, with a view to improve the position of the medical officers, and to secure more efficient relief to the poorer classes.

Tuesday, January 31st.

ADULTERATION OF FOOD. Mr. SCHOLEFIELD obtained leave to bring in a Bill for preventing the Adulteration of Articles of Food or Drink. The Bill was read the first time.

Medical News.

BIRTHS, MARRIAGES, DEATHS, AND APPOINTMENTS.

** In these lists, an asterisk is prefixed to the names of Members of the Association.*

BIRTHS.

Of sons, the wives of—

HEWITSON, William, Esq., Surgeon, Allenheads, on Jan. 25.

*MATTHEWS, W. C., Esq., Longsight, Manchester, on Jan. 28.

Of daughters, the wives of—

ARMSTRONG, H., M.D., Peckham, on Jan. 31.

*GRAMSHAW, J. H., Esq., Gravesend, on Jan. 31.

*LODGE, Llewelyn, L.R.C.P.Ed., St. Asaph, on Jan. 27.

DEATHS.

ALEXANDER, Thomas, Esq., C.B., Director-General of the Army Medical Department, on Jan. 31.

DAVIES. On January 24th, at 11, Leonard Place, Kensington, aged 74, Frances C., widow of the late R. L. Davies, Esq., Surgeon Bengal Army.

THOMSON, F. Hale, Esq., Surgeon, at 4, Clarges Street, aged 60, on January 22nd.

TODD, Robert B., M.D., F.R.S., at 26, Brook Street, on Jan. 30.

PASS LISTS.

ROYAL COLLEGE OF PHYSICIANS OF LONDON. Fellows admitted at the Comitia Majora, held on Wednesday, Feb. 1:—

BLACK, James, M.D., Edinburgh

SMITH, Sir Andrew, K.C.B., M.D., Thurlow Square

At the same Comitia, the following gentlemen were admitted members of the College under the temporary bye-laws:—

BELL, H., M.D., Aberystwith
BLACK, C., M.D., Chesterfield
BLACK, Glass, M.D., Torquay
DAY, Henry, M.D., Stafford
FEARNSIDE, H., M.B., Preston
HALL, W., M.D., Exeter
HODGES, E., M.D., Bath
LUND, George, M.D., Madeira
MACTURK, W., M.D., Bradford
M'NICOLL, David H., M.D., Southport
ROBERTS, Wm., M.D., Manchester
WILSON, Edward T., M.B., Hen Castle, Pembrokeshire
YORK, James, M.D., Market Harborough

APOTHECARIES' HALL. LICENTIATES admitted on *Thursday, January 19th*, 1860:—

GRIFFITH, Alfred Leete

Thursday, January 26th.

BRADDON, Charles H., Upton-on-Severn
BULLOCK, Thomas W., Stow-on-the-Wold
CULLING, R., West Lyford
HICKS, Charles, Smethwick
HUDSON, G., Newport, Yorkshire
MURPHY, J. B., West Ella
WARBURTON, C. W., Betley

The following gentlemen also, on the same day, passed their first examination:—

ECCLES, Edmund, St. George's Hospital
HARRIS, William J., Worthing

POOR-LAW MEDICAL REFORM.

A DRAFT of a new Poor-Law Medical Bill has just been issued by Mr. Griffin. As it is of great length, we are obliged to abridge certain portions; but we insert sufficient to enable its provisions to be understood.

I. Relieving officers, overseers or assistant-overseers, guardians, or justices of the peace, to grant orders for medical attendance: the orders to remain in force until the next quarter-day, unless the board of guardians direct to the contrary, or the patient's name be struck off as not requiring further medical aid.

II. Guardians to examine the books of the medical officers, and strike off the names of those persons who appear capable of paying for medical relief. The relief already granted to be paid for as an ordinary case of illness; or by half the fee under certain conditions; or by two-thirds in cases of operation. The entire fee to be paid for midwifery cases. The payment may be considered as a loan, and recoverable as already provided for.

III. Books to be examined on the board-day preceding each quarter-day.

IV. If a poor person is attended in emergency or difficulty without an order, the medical officer shall not be required to repeat his attendance without an order; but should he do so, and the patient's right to an order not be objected to by the board of guardians, he shall be remunerated as if an order had been obtained at first. The holder of an order for relief shall be thereby entitled to attendance in childbirth; for which the medical officer shall be paid an additional fee, as provided in section 17.

V. *Appointment of Medical Officers.* The guardians shall, whenever it may be requisite, or whenever a vacancy may occur, appoint a fit person to hold the office of medical officer, and to perform such duties as may be required of him by this Act, and by the rules and regulations of the Poor-Law Board. Every regulation applying to an officer elected after the passing of this Act, shall apply to every officer already elected by the guardians. Every medical officer to be appointed under this Act shall be appointed by a majority of the guardians present at a meeting of the board, consisting of more than three guardians, or by three guardians, if no more be present; and where there are two or more candidates for the office, the guardians shall choose one of those who is doubly qualified in accordance with sec. 7 of this Act, in preference to one who is only singly qualified. Every such appointment shall, as soon as the same has been made, be reported by the clerk to the Poor-Law Board.

VI. No appointment of medical officer shall be made unless advertised in one or two newspapers of the county in which the union is situate, at least seven days before the day on which such appointment is made. No advertisement shall be necessary for the appointment of an assistant or temporary substitute to an officer already appointed. No medical officer shall be elected to any district or workhouse who is the paid assistant of another medical man, and who is not practising *bonâ fide* on his own account, neither shall any medical officer continue to hold his appointment after the passing of this Act, unless he be a registered medical man. The guardians shall not invite tenders for the supply of medicines, or for the medical attendance on the paupers of the union.

VII. No person shall hold the office of medical officer under this Act, unless he be registered as a Fellow, Member, Licentiate, or extra Licentiate of the Royal College of Physicians of London; or, Fellow, Member, or Licentiate of the Royal College of Physicians of Edinburgh; or, Fellow or Licentiate of the King and Queen's College of Physicians of Ireland; or, Licentiate of the Society of Apothecaries, London; or, Licentiate of the Apothecaries' Hall, Dublin; or, Doctor, or Bachelor, or Licentiate of Medicine of any University of the United Kingdom; or, Doctor of Medicine of any foreign or colonial University or College; and also registered as a—Fellow or Member of the Royal College of Surgeons of England; or, Fellow or Licentiate of the Royal College of Surgeons of Edinburgh; or, Fellow or Licentiate of the Royal College of Surgeons of Ireland; or, Fellow or Licentiate of the Faculty of Physicians and Surgeons of Glasgow; or, Master in Surgery of any University in the United Kingdom; or holds a commission as medical officer in the army or navy, dated prior to the passing of this Act; or as surgeon or assistant-surgeon in the service of the Hon. East

India Company, dated previous to the first day of August, 1826; or was in practice as an apothecary on the twelfth day of August, 1815. Provided always that if it be impracticable for the guardians to procure a person doubly qualified to attend on the poor, or that the only person so qualified shall have been dismissed from office by the Commissioners or Poor-Law Board; then, and in such case, the guardians shall cause a special minute to be made, stating the reasons which make it necessary to employ a person not doubly qualified; and the Poor-Law Board may permit the employment by such guardians of any person if registered to practise as a medical man, although such person be not doubly qualified, or has been dismissed from office by the Commissioners or Poor-Law Board. But nothing herein contained shall authorise the guardians to continue for a longer period than from year to year any medical officer *hereafter* to be appointed, who at the time of his appointment shall not be doubly qualified, or shall not, during the period of his office, become so qualified.

VIII. Every medical officer *already appointed*, whatever his qualifications may be, or hereafter to be appointed, if doubly qualified, shall continue, if registered, to hold his appointment according to the regulations of the Poor-Law Board then in force until he shall die, or resign, or be proved to be insane, or become legally disqualified to hold such office, or be removed by the Poor-Law Board for non-fulfilment of his duties. Should any medical officer be incapacitated by sickness, accident, or other sufficient reason, he shall appoint a registered medical man to act as his temporary substitute, subject to the approval of the guardians, failing which, the guardians shall appoint a substitute, and pay him the proportion of the salary that would have been payable to the officer whose duty he performs.

IX. Permits changes in the arrangement of districts by guardians, with consent of Poor-Law Board.

X. When any district medical officer shall cease to hold his office, or shall give notice of his intention to do so on a certain day, the guardians shall proceed to make a new appointment, unless the guardians, with the consent of the Poor-Law Board, shall divide the said district amongst the other districts.

XI. The guardians shall not assign to any medical officer hereafter to be elected a district which extends beyond six miles from his residence, or if at the time of his appointment this distance has been exceeded, the appointment to that part of the district beyond the six miles shall only be continued as a yearly office, and so long only as it may be found impracticable to obtain the services of a qualified medical man living within the prescribed distance. Whenever any medical officer shall have had more than one thousand five hundred patients on his list in any one year, excepting in the case of an epidemic, it shall be the duty of the guardians to reduce the size of the district, or to appoint an additional medical officer thereto. Provided that nothing herein contained shall prevent the guardians, in any case of emergency or under any special circumstances, from appointing one or more registered medical officers to act temporarily for such time and upon such terms as the Poor-Law Board shall approve.

XII Public vaccinators shall be registered medical men, and have the same qualifications as union medical officers.

XIII. *Duties of a Medical Officer.*

XIV. *Duties of a District Medical Officer.*

XV. *Duties of Medical Officer for the Workhouse.*

[These clauses are founded on the consolidated order of the Poor-Law Board.]

XVI. *Remuneration of Medical Officers.* From and after the 24th day of June next, the salary of a district medical officer shall be fixed in accordance with the number of statute acres contained in his district, the number of paupers in receipt of relief on an average in the first week in January, and the first week in July of each year on an average of the last three years, and the number of patients attended by him, or his predecessor in office, on an average of the last three years; and annually for three years, a fresh calculation shall be made on an average of the three preceding years, after which time a triennial calculation shall be made. But should any dispute arise as to the number of cases attended during the last three years, then the Poor-Law Board shall settle such dispute, or may direct that the payments shall be made in accordance with the number of cases the medical officers may in future attend, but after three years, the salary shall be fixed upon a triennial calculation, in the manner already described. (1.) The salary shall be calculated at one penny per acre for each acre contained in the district, together with (2.) 1*s.* 6*d.* per head upon the average number of persons in the receipt of relief in the district, in the first week in January and the first week in July in each year, on an average of the three preceding years, together with (3.) 2*s.* 6*d.* for each patient attended by the medical officer on an average of each year during the last three years, when the medical officer finds the medicines, and 1*s.* 6*d.* for each patient when the Guardians or Poor-Law Board find the medicines. The salary of the medical officer of a workhouse shall be fixed on the same basis as that of the district medical officer, but instead of the acreage payment he shall receive per head for those in receipt of relief on an average in the first week in January, and the first week in July of each year, 1*s.* in addition, for each mile beyond the first mile, and 2*s.* for each mile beyond the first three miles the union house may be situated from his residence.

XVII. *Medical Fees.* A table of fees for midwifery and surgical operations shall be drawn up by the Poor-Law Board, with the advice of the General Council of Medical Education and Registration of the United Kingdom, and revised every seven years; and every medical officer, whether of a workhouse or district, after attending a case included in that table, shall, in addition to his salary, be entitled to his fee accordingly; and on no account shall the guardians be allowed to compound for the same; or should the case be sent to an hospital, by order of the board of guardians, relieving officer, or overseer, the treasurer for the time being of such hospital shall be entitled to receive the said fee for the benefit of the funds of the hospital. All the fees shall include the payment for the supply of such medicines as may be required, and of apparatus and splints, excepting wooden legs, crutches, trusses, elastic bandages, or any apparatus which will require to be worn after the medical officer has ceased to attend the case. Provided that if several of the fees specified in this section become payable with respect to the same person, at the same time, and in consequence of the same cause of injury, the medical officer shall be entitled only to one of such fees; and if they be unequal, to the highest. But in the case of fractures and dislocations of separate limbs, and amputations of more than one limb, each shall be paid for in full, if the patient survives the injury more than thirty-six hours, if not, then only one such fee shall be paid. Provided also, that in the case of a patient who has been under treatment only a short time before being removed into the district of another medical officer, or into the workhouse, then the fee payable in accordance with the table of fees, to one of the medical officers, shall be divided between them in such proportion as is fair; or should the patient be removed into an hospital within one week after his application to the medical officer, and without any operation having been performed, then the case shall be considered as an ordinary order, excepting in the case of fractures, where half the fee shall be payable, or dislocations, which, if reduced, shall be paid for in full. In case of dispute as to the actual sum due to the medical officer, the Poor Law Board shall decide the question.

XVIII. In any serious surgical case not enumerated in the table of fees, and for which an operation shall be performed, the guardians shall make to the said officer such reasonable extra allowance as the Poor-Law Board may think fit.

XIX. In any case where it is necessary, a consultation may be held, and be paid for by the guardians, if the medical man called in be registered, after the following rates:—When the patient resides within one mile of the medical man consulted, who must be a registered medical man, 10*s.*; if more than one mile, and less than three miles, £1; if more than three miles, £2. The guardians shall in no case be called upon to pay for the advice of more than three medical men; and not even that number, unless satisfactory proof be given of their absolute necessity.

XX. Except in cases of sudden accident, or other cause immediately threatening life, no medical officer shall be entitled to receive remuneration for any operation, the payment for which is £5, unless he shall have obtained the advice of a registered medical man before performing such operation, and unless he shall produce a certificate from such registered medical man, that in his opinion it was proper to perform such operation.

XXI. In all urgent cases, in which a registered medical man, not an union officer, or if an union officer, not appointed to the district or parish where the patient may be, shall render important service in the absence of the medical officer of the union or his substitute, the guardians shall pay him a reasonable fee, and the same shall be charged to the account of the common fund of the union; but his services shall not be con-

tinued longer than is sufficient to procure the attendance of the appointed medical officer.

xxii. The relieving officer shall provide for the conveyance of the medical officer's book to and from the board each board-day.

xxiii. Where there is a dispensary established by the guardians, it shall not be lawful for the guardians to compel the poor living more than six miles from the dispensary, to visit the medical officer there, or send that distance for their medicines; neither shall they permit a medical officer to have a district extending beyond six miles from his residence, if there is a registered medical man living nearer, who is willing to attend them on the terms of this Act.

xxiv. In case of the employment of a medical officer who is debarred private practice by the guardians, his salary shall be fixed in accordance with this Act, and not less than at the rates set out in it.

xxv. In no case shall the guardians be allowed to enter into a contract with a druggist for the supply of medicines and dispensing them to the poor; but shall either find them through the medium of their own medical officers, or purchase the drugs and have them dispensed at a dispensary belonging to the union, by a dispenser resident at the dispensary, who shall not be a visiting medical officer, but shall make up the medicines in accordance with the orders of the medical officers.

xxvi. The salary of every medical officer shall be payable up to the day on which he shall cease to hold such office, and no longer.

xxvii. An officer who may be suspended, and who may, without the previous removal of such suspension, be dismissed by the Poor-Law Board, shall not be entitled to any salary from the date of such suspension.

xxviii. Cod-liver oil, leeches, bread, linseed-meal, and other requisites for poultices, cotton-wool and calico, and a list of more expensive drugs and appliances, as shall be drawn up by the Poor-Law Board with the advice of the General Council of Medical Education and Registration, shall not be considered as included in any contract by the guardians with their medical officers, but shall be found by the guardians, through the medium of the relieving officers or master of a workhouse, whenever ordered.

xxix. The Poor-Law medical officer shall be free from all tolls between his residence and the furthest part of the district of the union for which he is appointed to act, while on duty.

xxx. The Poor-Law medical officer shall be free of the tax assessed on one horse, carriage, and man-servant.

xxxi. The medical officer may direct in writing such diet for any individual sick person as he may deem necessary, and the relieving officer or master of the workhouse shall obey such directions until ordered to the contrary by the board of guardians; and all meat, wine, brandy (which shall be South African wine or Colonial brandy, unless ordered to the contrary), and British gin so ordered, shall be kept at the workhouse, and given out by the master of the workhouse, provided the patient for whom they are ordered does not live more than three miles from the union house; if at a greater distance, then in such manner as may be more convenient for the poor; but in no case shall a daily allowance of meat be given at one time for a longer term than three, or at most four days, under ordinary circumstances, but the medical officer shall not be required to give an order each time, if he has previously stated the period for which the meat or wine is to be continued.

xxxii. Medical relief received under this Act, if unaccompanied by other relief, shall not be deemed parochial relief, alms, or charitable allowance to such person; and no such person shall by reason of such medical relief or assistance, be deprived of any right or privilege, or be subject to any disability, or any disqualification whatsoever.

xxxiii. All payments for medical assistance shall be a union charge, excepting those named in Sec. xvi. (3), which shall be paid for out of the consolidated fund, and the Poor-Law Board shall have the power to order dispensaries to be established under their management, subject to the control of the Poor-Law Board. The expenses of the same shall be paid out of the consolidated fund. Dispensers must be registered as medical men, or be members of the Pharmaceutical Society.

xxxiv. It shall be the duty of the relieving officers to mark with red ink, every week, all fresh patients recorded in the medical officers' books who are not in the receipt of other than medical relief.

xxxv. It shall be the duty of the Poor-Law Board to appoint an additional commissioner or secretary, who shall be a registered medical man, and possessed of both a medical and surgical diploma, license, or degree, in accordance with Section 7 of this Act, and have been an union medical officer of not less than three years standing [and shall be nominated by the union medical officers on one month's notice being given by the Poor-Law Board, in two or more of the weekly medical journals, published in London, that such appointment will be made on a certain day; the nomination to be by letter sent to the Poor-Law Board; should there be more than one candidate, that candidate shall be chosen who has a majority of votes, and should there be an equality of votes, the president of the Poor-Law Board shall give the casting vote]. The duty of the said commissioner or secretary shall be to conduct the medical correspondence, and prepare the medical report to be laid before Parliament annually, and adjudicate in all matters having reference to the union medical officers, subject to the confirmation of the Poor-Law Board. The said commissioner or secretary shall be awarded such salary as the Lord High Treasurer or the Commissioners of the Treasury, or any three of them may direct, with a superannuation allowance after not less than ten years service, of one-third at least of the said income, or such higher sum as the Lord High Treasurer or Commissioners may direct.

xxxvi. *Vaccination.* From and after the 24th day of June next, it shall be the duty of every registrar of births to deliver to the person registering the birth of a child, a form of vaccination certificate, according to the schedule hereinafter annexed, marked (A), the blanks for the name of the child, the date of its registration or birth, its parent's name, the number of the house, street, or other locality, parish and county in which resident, number on the register, name of the public vaccinator of the district, his place of residence, or other house in which he vaccinates, with the days and hours on which he attends for that purpose, to be filled up by the registrar previous to his delivery of it; which form of certificate it shall be the duty of the father or mother of the child, or in the event of death, illness, absence, or inability of the father or mother, then the person who shall have the care, nurture, or custody of the said child, to deliver within twelve months after the registration of its birth to a registered medical man or the appointed public vaccinator of the district in which the child is then resident, who shall, after vaccination of the said child, and inspection on the eighth day therefrom, or later, fill up the blanks therein with his own name, residence, and day of the month and year, and strike his pen through the words not required to be retained, as "successfully vaccinated," or "is unsusceptible of vaccination," or "is not in a fit state to be vaccinated," as the case may be, and deliver or cause to be delivered, the said certificate to the registrar of the district, who shall then append his name and die of office to the certificate, and give it to the parents, etc., of the child on their applying for the same, or a copy thereof, and record in his books that the child has been successfully vaccinated or is insusceptible of vaccination, or is not in a fit state of health to be vaccinated, according as the vaccinator may have declared. A copy of the blank form, if lost, or otherwise required, to be furnished, free of charge, by the registrar.

xxxvii. In the months of March and September of each year a list of all persons born since August 1, 1858, and above the age of twelve months, and under that of sixteen years of age, and then living in each registration district, and not registered as successfully vaccinated, be made out by the registrar and delivered to one of the public vaccinators of the district in which the child resides, whose duty it shall then be to call upon the parents or other persons having the custody of the said child, and offer to vaccinate it at the public expense, if it be in a fit state to be vaccinated, and does not appear insusceptible of vaccination in consequence of having been previously successfully vaccinated, or having had the small-pox: it shall then be the duty of the public vaccinator to make his report accordingly to the registrar, who shall enter the same in his book, and if the parents or other persons having the custody of the said child have refused to have it vaccinated, it being at the time in a fit state to be vaccinated, the registrar shall immediately sue the father or mother, or other person having the care, nurture, or custody of the said child for a penalty of ten shillings and costs of the prosecution, or in default of payment thereof, to be imprisoned in the common gaol or house of correction for any term not exceeding one month, nor less than one week, which penalty shall be incurred annually until a certificate be furnished that the child has been vaccinated, or is insusceptible of vaccination, or is sixteen years of age.

xxxviii. Should the said child be vaccinated in some other union or district of an union than that in which it was born, the certificate of the successful vaccination, insusceptibility, or that it is not in a fit state to be vaccinated, shall be delivered to the registrar of births of the district in which the child then resides, and it shall be the duty of the said registrar immediately to forward by post a copy of the said certificate to the registrar of its birth, and append his name and die of office to the original certificate, and return it to the parents, or other persons having the care or custody of the said child, on application, and shall record the same in a book, to be specially provided for such purpose.

xxxix. A certificate of the postponement of vaccination in consequence of the ill state of health of the said child shall only continue in force six months, and must at the end of that time be renewed if required.

xl. The vaccinators appointed by the boards of guardians shall be entitled to the following fees:—1. For every vaccination, if successful, up to one hundred in number, annually performed, 2*s.* 6*d.* 2. For every vaccination, if successful, beyond one hundred and less than four hundred in number, annually performed, 2*s.* 3. For every vaccination, if successful, beyond four hundred in number, annually performed, 1*s.* 6*d.* 4. For each certificate as to the state of a child on the half-yearly list furnished by the registrars, 2*s.* 6*d.* In addition to these several fees of 2*s.* 6*d.*, 2*s.*, and 1*s.* 6*d.*, there shall be paid an additional fee of 1*s.* for each case vaccinated beyond one mile from the residence of the public vaccinator, and 2*s.* for each case of vaccination beyond four miles from the residence of the public vaccinator. No case of vaccination shall be paid for a second time unless the person vaccinated be above the age of 15 years, or an order being given for the vaccination by the board of guardians or privy council.

xli. Every registered medical man, whether he be appointed a public vaccinator or not, who shall deliver to the registrar of the district in which he resides one of the printed forms, filled up in accordance with No. 36 of this Act, shall be entitled to a fee of 1*s.*

xlii. All the above fees for vaccination and vaccination certificates shall be paid by the registrars, who shall be repaid the same quarterly by the boards of guardians, on their being furnished with a receipt from the vaccinators or certificators that the money has been paid to them.

xliii. Every child under the age of 16 years, and above that of twelve months, who dies of small-pox, at a later period than twelve months after passing this Act, who has not been registered as vaccinated, or insusceptible of vaccination, or of unfitness for vaccination, shall subject the father, mother, or other person having the custody of the said child, to a penalty not exceeding five pounds, nor less than one pound, and costs of the prosecution, or in default of payment thereof, to be imprisoned for a term not exceeding three months nor less than one month, unless it shall be proved that the child had been vaccinated by a registered medical man previous to the appearance of small-pox on it, or the justices before whom the case may be tried, shall consider there are sufficient reasons why the penalty should not be enforced.

xliv. Forbids attempts to produce small-pox by inoculation or otherwise, under a penalty of £5 or imprisonment for any term not exceeding two months, nor less than one month, with hard labour.

xlv. No case of vaccination shall be deemed successful unless a decided vesicle be formed, from which lymph might be taken, if desired, on the eighth day, or later, capable of producing the vaccine disease in other persons, if vaccinated with it.

xlvi. A medical man or other person giving a certificate that a child has been successfully vaccinated, without having ascertained the fact by inspection on the eighth day or later after vaccination, or refusing to give a certificate that a child has been successfully vaccinated by him, shall be subject to a fine of five pounds.

xlvii. All penalties, by this Act imposed, shall be enforced by the registrar of the district in which the child or other person infringing this law is residing, before two justices of the peace.

xlviii. Half of all penalties under this Act shall be awarded to the registrar, and the other half shall be applied in aid of the funds applicable to the relief of the poor in the place where the offence may have been committed; and all expenses incurred in enforcing the penalties under this Act shall be a charge upon the union, parish, or place in which the child may at the time be residing.

xlix. Should a registrar fail to enforce the penalties under this Act within six months after their occurrence, he shall, on proof being afforded to the Poor-Law Board, be dismissed from his office.

l. Repeal of so much of the Act of the 3 and 4 Victoria, cap. 29, 4 and 5 Victoria, cap. 32, and the 16 and 17 Victoria, cap. 100, as is incompatible with this Act, shall be, and is hereby repealed and annulled.

li. Justices of the peace for boroughs and towns shall have the right to act as *ex officio* guardians.

lii. Where medical officers of health have not been appointed, and when vacancies in these appointments shall occur, the district medical officers of the several unions, parishes, and incorporations, shall be the medical officers of health for their respective districts.

liii. In case of sudden death, and where no registered medical man has attended a deceased person immediately preceding his death, it shall be the duty of the registrar of deaths for the district wherein the deceased is lying dead, to give an order to the district medical officer of the district in which the body is, to institute an inquiry; and should it appear to the said medical officer, after viewing the body externally, which by this Act he is authorised to do, and on inquiry, that the person died from natural causes, or, if from violence, that it was accidental, and blame did not appear to attach to any person, then he shall give a certificate to that effect to the registrar of the district; but should he have reason to believe that the death was not from natural causes, or that blame did attach to some person or persons, then he shall give a certificate accordingly, and also immediately give notice of the same to the coroner, who shall thereupon hold an inquest. The district medical officer for such service shall be entitled to a fee of 5*s.*, with 1*s.* per mile as travelling expenses, which the registrar is hereby required to pay, and charge the same to the Board of Guardians, who are hereby authorised to pay the fee and mileage so charged, and debit the same to the common fund of the union. Nothing in this Act, however, shall prevent a coroner holding an inquest on any case that he may think demands an inquiry.

liv. Every registered medical man shall receive 1*s.* for every certificate of the cause of death which he furnishes to the registrar of deaths; and the registrar is hereby empowered to pay the same, and charge it to the Board of Guardians, who are to pay the fee so charged, and debit it to the account of the common fund of the union.

lv. The statutes now in force, or rules, orders, and regulations of the Poor-Law Commissioners or Poor-Law Board, or parts of either one or the other, which are contrary to the true intent and meaning of this Act, shall be repealed and rescinded, and from and after the twenty-fourth day of June next shall have no force or effect.

lvi. The Poor-law Board shall have full power to make all rules, orders, and regulations, in order effectually to carry out the true intent and meaning of this Act.

lvii. A copy of this Act shall be sent by the Poor-Law Board to every Poor-Law medical officer now in office, and to every one that may hereafter be appointed, as well as all rules, orders, and regulations of the Poor-Law Board, that have reference to the discharge of the duties of the medical officers, and are not repealed or rescinded by this statute, and all future rules, orders, and regulations that shall be made from time to time by the Poor-Law Board, relating to the medical officers, and also a copy of the official circular as often as it is published.

lviii, lix, and lx. Explanatory, etc.

The Collections of the British Museum. Last week a very important decision was arrived at by the trustees of the British Museum. The separation of the natural history collections from the books and fine arts collections was carried by a majority of one. All the ministers, who are included among the trustees, voted on the question, and unanimously, I believe, for the separation. The old and unofficial trustees, as a general rule, voted against the separation. Thanks to this decision, we may at last hope to see both the natural history specimens and the fine art treasures of the Museum properly located. At this moment each of these collections incommodes and crowds on the other. There is about as much in the way of zoology and sculpture stowed away in damp, dark, and inaccessible vaults, holes, corners, cupboards, and cellars, as there is visible to the public, or rather to the students, for theirs is the interest to be mainly considered. (*Manchester Guardian.*)

THE GAS QUESTION. In a letter addressed to the *Times*, Dr. Challice, Medical Officer of Health, for Bermondsey, remarks that the summary dismissal of the proceedings taken by the Bermondsey Vestry against the Surrey Consumers' Gas Company for causing a public and dangerous nuisance by the distribution of deleterious gas for two days throughout a district containing a population of nearly 100,000 by Mr. Combe surely calls for reconsideration. As the question now stands, public comfort may be set at nought, health and life perilled with impunity. Upon the evidence of the engineer to the Company to the effect that this great nuisance (which so poisoned the atmosphere as to stay the worship of the congregations in our churches, was even more suffocating in private dwellings, and also injuriously pervaded the wards of the hospital) arose from "a screw loose," which when discovered was promptly remedied, the summons was at once dismissed. Thus the evidence of the person especially implicated, uncorroborated by any impartial testimony, was deemed sufficient for the past, and a satisfactory assurance for the future! Yet this is not the first occasion of a similar grievance in Southwark, in the district monopolized by this Company. The other gas companies have provision for the prompt prevention of such a serious danger to the public, should accident occur, as the supply of unpurified gas, which when burnt is pernicious, and, if breathed, is fatal. All who are not blinded by selfish interests will now see the necessity for legislative action on a question of such great public importance.

THE MEDICAL SERVICE OF THE RUSSIAN NAVY. In consequence of a recent decision of the Emperor of Russia, the principal medical officers of the navy of that country will be sent abroad for two years, during which time they will be required to visit not only the most celebrated hospitals and *cliniques* in Europe, but also foreign ports, especially those of France, England, and the Low Countries, for the purpose of thoroughly studying the hygienic and medical organisations of European fleets, the lodging and diet of men in barracks and on board-ship, the influence of climate and locality on disease, the organisation of naval hospitals and lazarettos, and other matters of importance. (*Gazette des Hôpitaux*; 26 Janvier, 1860.)

GRATITUDE. The following is a translation of a letter which has appeared in the *Moniteur de l'Armée*. The writer is G. Hruby, lieutenant in the 47th Regiment of Austrian Infantry. He appears to have been wounded and taken prisoner in the late war:—"Will you kindly insert in your excellent journal the following act of thanks. The undersigned expresses his deep gratitude to M. de Vérac, *médecin-major* of the first class, whose happy interference has saved him from amputation of his arm. He addresses also his warmest thanks to M. Lhonneur, *médecin aide-major*, for the good services which he lavished on him. Finally, he is happy to see, in the preservation of his arm, an additional proof of the high intelligence and scientific practice of French surgeons. Written at Cremona, 12th January, 1860."

EPIDEMIOLOGICAL SOCIETY. On Monday, February 6, a paper will be read on "Quarantine in the East," by R. F. Foote, M.D.

HEALTH OF LONDON—JANUARY 28TH, 1860.

[*From the Registrar-General's Report.*]

	Births.	Deaths.
During week ..... { Boys'..1089 / Girls.. 978 }	2067	1386
Average of corresponding weeks 1849-58	1691	1291

Among the causes of death were—bronchitis, 202; pneumonia, 127; phthisis, 137; small-pox, 26; scarlatina, 33; measles, 19; diphtheria, 11; hooping-cough, 50. The deaths from pulmonary diseases (exclusive of phthisis) were 368, being 78 above the corrected average.

Barometer:
Highest (Sat.) 29·901; lowest (Sun.) 29·148.

Thermometer:
In sun—highest (Mon.) 69·5 degrees; lowest (Thurs.) 46·0 degrees.
In shade—highest (Fri.) 49·0 degrees; lowest (Sat.) 27·5 degrees.
Mean—32·9 degrees; difference from mean of 43 yrs. + 0·5 degree.
Range—during week, 21·5 degrees; mean daily, 11·5 degrees.
Mean humidity of air (*saturation* = 100), 80.
Mean direction of wind, S.W.—Rain in inches, 0·28.

TO CORRESPONDENTS.

C. R. We have not heard that the Society of Apothecaries are likely to grant their license to the Members of the College of Surgeons, on the same terms as the diploma of the College is now being granted to the Licentiates of the Hall. We have received no positive news about the recognition by the Poor Law Board of degrees in medicine.

Members should remember that corrections for the current week's JOURNAL should not arrive later than Wednesday.

Communications have been received from:—DR. INMAN; DR. MARKHAM; DR. JAS. RUSSELL; DR. HEN. HANCOX; DR. RANKING; DR. COCKLE; MR. J. V. SOLOMON; DR. COWDELL; MR. LL. LODGE; MR. J. H. GRAMSHAW; DR. SKINNER; MR. J. G. APPLETON; MR. CLARENCE MATTHEWS; M.D.; C. R.; DR. R. U. WEST; MR. RICHARD GRIFFIN; DR. SIEVEKING; M.D. & M.R.C.P.LOND.; MR. W. Y. SHEPPARD; MR. C. WILLIAMS; and MR. R. S. CROSS.

ROYAL MEDICAL BENEVOLENT COLLEGE.

(INCORPORATED BY ACT OF PARLIAMENT.)

PATRON—HER MOST GRACIOUS MAJESTY THE QUEEN.
PRESIDENT—THE RIGHT HON. THE EARL MANVERS.
VISITOR—THE LORD BISHOP OF WINCHESTER.
TREASURER—JOHN PROPERT, ESQ.

The Council of the ROYAL MEDICAL BENEVOLENT COLLEGE have the pleasure to inform the Governors and Friends of the Institution, that the EIGHTH ANNUAL FESTIVAL will take place at the FREEMASONS' TAVERN, on THURSDAY, the 26th of APRIL NEXT, when the RT. HON. THE LORD LEIGH has kindly consented to take the Chair.

The following Gentlemen have already undertaken to act as Stewards on the occasion, and a further List will be published shortly. Gentlemen who are desirous to serve, are requested to send their names to the Treasurer, or to the Secretary. There is no liability attached to the office of Steward.

Birkett, Edmund Lloyd, M.D., 48, Russell Square.
Burlton, Colonel, Portland Place.
Carr, William, Esq., Lee Grove, Blackheath.
Chandler, James, Esq., Epsom.
Churchill, John, Esq., New Burlington Street.
Cory, C. Fred., M.D., 8, Nassau Place, Commercial Road.
Dalton, William, Esq., Cheltenham.
Fletcher, Bell, M.D., Waterloo Street, Birmingham.
Forest, Robert, Esq., Montague Place, Clapham Road.
France, John F., Esq., Bloomsbury Square.
Gibney, Dr., Cheltenham.
Greaves, Edward, Esq., M.P., Avonside, Barford, Warwick.
Hammond, J. J., Esq., Jersey and Guernsey.
Harcourt, George, Esq., Chertsey.
Harrison, W. A., Esq., 10, Kepple Street, Russell Square.
Hawkins, Bisset, M.D., 29, Upper Harley Street.
Havers, John, Esq., 10 Bedford Place, Russell Square.
Hogg, Jabez, Esq., Gower Street, Bedford Square.
Hayes, Rev. Sir J. W., Bart., Arberfield Rectory, Reading.
Jones, Dr., Lower Seymour Street.
Jones, William, Esq., 20, King's Arms Yard.
Kendall, T. Marsters, Esq., Lynn, Norfolk.
Machin, John, Llington Lodge, Leamington.
Manby, Frederick, Esq., East Rudham.
Milles, Major, 6, Duke Street, Portland Place.
Oxley, T., Esq., Boddington Manor, Cheltenham.
Pilkington, Thomas, Esq., Cheltenham.
Robertson, C. Lockhart, M.D., Hayward's Heath, Sussex.
Smith, William Abbotts, M.D., 38, Doughty Street, W.C.
Sparrow, Dr., Zetland Place, Southsea.
Thorpe, Major-General, Guernsey.
Watlington, F. W. Perry, Esq., M.P., Moor Hall, Harlow, Essex.
Wyman, George, Esq., Alcester.

By order of the Council.
ROBERT FREEMAN, Secretary.
HERBERT WILLIAMS, Assistant-Secretary.

Office, 37, Soho Square, W., 2nd February, 1860.